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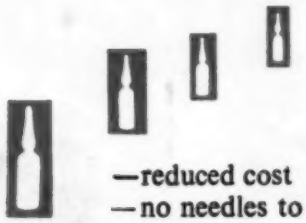

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1. Dr. S. N. Sanyal — Cal. Med. Journal (1950), 47 : 313
2. Dr. S. N. Sanyal — Do. (1951), 48 : 53
3. Dr. S. N. Sanyal — Do. (1952), 49 : 343
4. Dr. S. N. Sanyal — Do. (1953), 50 : 409, 413

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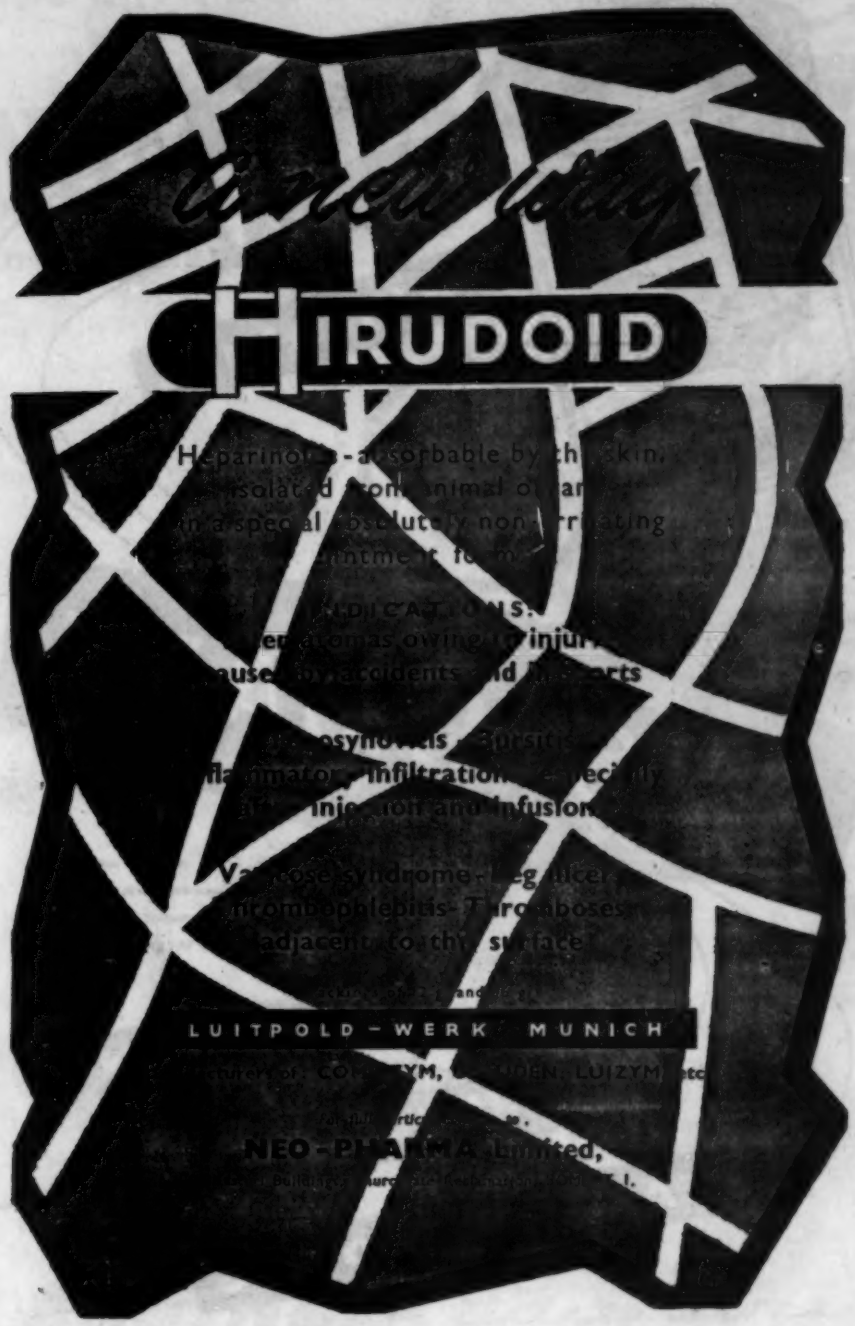
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CALCUTTA—26.

Journal of the
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Vol. 24, No. 12 CALCUTTA March 16, 1955
PUBLISHED TWICE A MONTH

ORIGINAL ARTICLES

OBSERVATIONS ON COOLEY'S ANAEMIA

H. GANGULI, M.D.
AND
S. C. LAHIRI, M.B.B.S.
Department of Medicine, Medical College, Calcutta.

Cooley's anaemia has been described to be confined almost exclusively to children of Mediterranean origin. Cases have been reported from all over the world and besides the Mediterranean many other races have been reported to show Cooley's anaemia: English (Bywaters, 1938); Chinese (Foster, 1940; Wang and Khoo, 1940); Negro children in U.S.A. (Damashek, 1943; Stiles *et al*, 1946).

In India between 1938 and 1953, 15 cases have been reported including 3 cases from this hospital (Mukherjee, 1938; Napier *et al*, 1939; Coelho, 1939; Patel and Bhende, 1939; Dhayagude, 1943; Malhotra and Chuttani, 1944; Patel *et al*, 1950; Chaudhuri, 1947; Chandra and Chaudhuri, 1950; Pirzada and Kapur, 1951; Tyagi, 1953).

We now report a further 11 cases which we have come across in this department since the year 1952.

Classical Description

Cooley's anaemia is a fatally progressive disease of familial and racial incidence; there is progressive splenomegaly with certain bony changes and the peripheral blood contains leptocytes, target cells, elongated cells and erythroblasts. This is transmitted as a Mendelian dominant through either parent. The children with this condition are thought to be homozygous, the heterozygous children showing only mild forms.

Blood changes: haemoglobin, R.B.C. and M.C.V. are decreased. The haemoglobin and R.B.C. are usually 4 to 9 g. per cent, and 2 to 4 million per c.mm. respectively. The anaemia is usually hypochromic and microcytic, with a low colour index. Normoblasts are present in plenty. Erythroblasts may not be a main feature and may not be seen. Reticulocytosis, poikilocytosis, and anisocytosis are present. Target cells, Cabot cells, and leptocytes are found but platelets are usually unaltered; bleeding time and coagulation time are usually normal. Fragility of R.B.C. is almost always definitely decreased. There is a persistent leucocytosis of the order of 13,000 to 50,000 per c.mm.

The most striking clinical feature is a peculiar facial expression due to yellowish discoloration of the skin associated with bony changes which is not usually observed during the first year and often not until after several years of anaemia; and a few of the patients never develop this characteristic facies. The changes result chiefly from a peculiar development of the orbital and malar bones, giving rise to some prominence of the eyes, with the suggestion of an epicanthal fold, while the malar eminences give the effect of high cheek bones. The photograph (Fig. 1) is that of a boy showing a characteristic prominence of the front teeth in the upper jaw due to marrow hyperplasia. The spleen is enlarged, and so is the liver. Sometimes the lymph glands are enlarged.

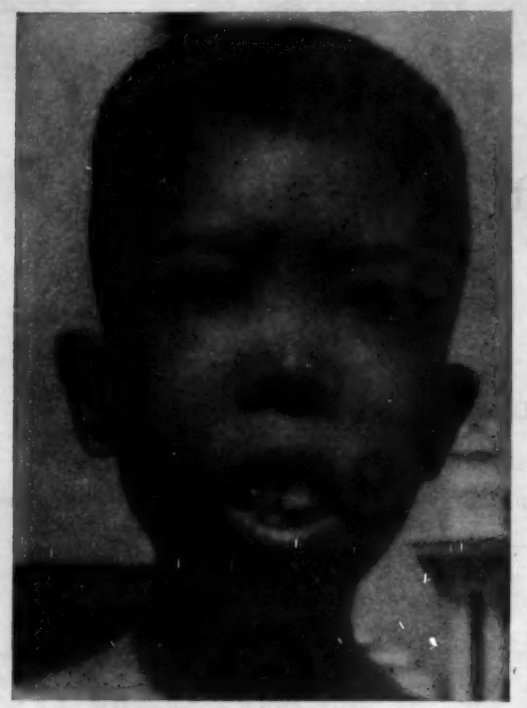

FIG. 1.

Roentgenography: The bony alterations in the skull appear first in the frontal bone. There is thinning of both the inner and outer tables with vertical striation in the diploe. In the long bone there is trabeculation and rarefaction with finely stencilled diagonal striations at the metaphysis. The skeletal changes are essentially non-specific, and are seen in chronic haemolytic anaemias of childhood (Caffey, 1937). The greater the anaemia, the more marked the skeletal changes are likely to be. The later the first manifestation of the disease the less advanced the osteoporosis is likely to be. Skull changes may start before the changes in the long bones or *vice versa* (Wolman and Dickstein, 1946; Smith, 1943).

Apart from these, eye changes have been reported in only 2 cases (Rudd, Evans and Peeny, 1953).

CASE REPORTS

Case 1—A.D., Hindu male, 13 years old, was admitted for progressive weakness and enlargement of the abdomen for 6 years. The father appeared normal on routine clinical examination. The mother is dead.

On examination the patient was underdeveloped (weight 54 lbs.) fairly built, poorly nourished; the spleen was palpable just up to the left iliac fossa and firm; the liver was enlarged 1½ fingers and was firm; P/R/T 100/22/99°F; the apex beat was on the left 5th intercostal space, just outside the midclavicular line. A localised soft diastolic murmur in the mitral area was heard. B.P. 100/70 mm. Hg.

Examination of the blood: Haemoglobin 6·38 g./100 c.c., R.B.C. 2·9 m/cmm. P.C.V.—27 per cent, M.C.V.—79·3 cμ., M.C.H.—22 γγ., M.C.H.C.—27·7 per cent; target cells, poikilocytes, anisocytes, normoblasts, N. premyelocytes, N. myelocytes, N. metamyelocytes, Turk's cells (2 per 100 W.B.C.) were present W.B.C.—8,800 c.mm (poly 62 per cent, lympho 35 per cent, eosino 3 per cent); platelets—348,000/c.mm.; W.R. and serum tests for kala-azar—negative; van den Bergh's reaction—negative; blood bilirubin—2 mg./100 cc. Bone marrow: active erythropoiesis and active mitosis frequently seen; normoblasts constitute 91 per cent of the nucleated cells; most of the mature normoblasts were malformed and poorly haemoglobinated, granulopoiesis depressed greatly, but no evidence of maturation arrest; lymphopoiesis depressed; thrombopoiesis normal. Further examinations of blood, made later, showed lower Hb and R.B.C.

Roentgenography: The skull showed thinning of the inner and outer tables, with striations in the diploe; the lower end of the radius and the small bones of the hand showed a mosaic appearance.

Examination of the father's blood yielded nothing abnormal except presence of target cells in small numbers.

Case 2—C. S., Hindu, female, was admitted for a feeling of heaviness in the abdomen, and progressive weakness for 11 years. She was the elder of 2 children. There was no other abnormality in childhood. Both parents were normal on clinical examination.

On examination, the patient was underdeveloped; build and nutrition fair; colour of skin pale, with a yellowish tinge; face mongoloid, eyes slightly slanting, with impression of epicanthal folds. P/R/T—82/20/98°F; the spleen was palpable 3½ fingers below the costal arch and firm; the liver was palpable 2 fingers below the costal arch and firm. The apex beat was in the left intercostal space, ¼" inside the midclavicular line; a localised soft systolic murmur was heard in the mitral area.

Examination of the blood: Hb.—44 per cent, R.B.C.—2·46 m/c.mm., P.C.V.—23 per cent, M.C.V.—79·5 cμ., M.C.H.—23·1γγ, M.C.H.C.—29·8 per cent; poikilocytes, anisocytes, target cells and leptocytes were present; reticulocytes—5 per cent; fragility started at 0·4 per cent and ended at 0·26 per cent; W.B.C.—4500/c.mm., (poly 52 per cent, lympho 42 per cent, mono 2 per cent, and eosino 4 per cent). W.R. and serum tests for kala-azar were negative; bone marrow was normoblastic in reaction. Urine: Urobilinogen present in pathological quantities.

Roentgenography: In the skull both tables were thinned, with vertical striations of the diploe; open texture of the lower part of the radius and carpal bones, suggestive of Cooley's anaemia.

Blood examination of the father and brother revealed only presence of some target cells, and nothing abnormal could be detected in the mother's blood.

Case 3—B. M., Hindu male, 16 years old, was admitted for a progressive sensation of heaviness in the abdomen, and weakness for 9 years.

On examination, the patient was underdeveloped; he had a mongoloid face, with eyes slanting, and the suggestion of an epicanthic fold with presence of slight yellowish discoloration of the skin; anaemia moderately severe, bilateral gynaecomastia present, the spleen was palpable 7 fingers below the costal arch and firm; liver was palpable 2 fingers below the costal arch and firm.

Examination of the blood: Hb.—6·96 g./100 c.c., R.B.C.—2·76 m/c.mm., P.C.V.—24 per cent, M.C.V.—87 $c\mu$., M.C.H.—25·2 $\gamma\gamma$., M.C.H.C.—29 per cent; reticulocytes—12·6 per cent; normoblasts present—8 in 100 W.B.C.; mitosis and hypochromia present; target cells and anisocytes were seen. Fragility started at 0·44 per cent and completed at 0·20 per cent. E.S.R.—15 mm/hour. W.B.C.—6800/c.mm. (poly 46 per cent, lympho 49 per cent and mono 5 per cent); bleeding time and coagulation time—within normal limits. W.R. and serum tests for kala-azar were negative.

Roentgenography: Skull showed nothing abnormal.

Case 4—N.N.M., Hindu male, 5 years old, was admitted for irregular fever with cough, anasarca off and on, gradual increase in size of the head, and pallor for 4 years. He was the first of 2 children, the first having died at the age of 1 month.

On examination, he had a mongoloid facies; skull—box-shaped; severely anaemic; weight—24 lbs. 12 oz. The spleen and liver were both palpable 2″ below the costal arch and firm.

Examination of the blood: Hb., 6 g/100 c.c.; R.B.C., 1·94 m/c.mm.; normoblasts, oval cells, target cells, and poikilocytes were present; fragility started at 0·39 per cent and was completed at 0·21 per cent. W.B.C.—15,200/c.mm. (poly 52 per cent, lympho 41 per cent, mono 6 per cent and eosino 1 per cent). W.R. and serum tests for kala-azar were negative.

Roentgenography: Open texture of the skull and bones of the hand suggests Cooley's anaemia.

Case 5—T.K.B., Hindu male, 9 months old, was admitted for irregular fever and wasting for 6 months. He had had no dentition and could not sit up. This was the only child.

On examination, the child weighed only 10 lbs. 7 oz; weak and pale, hair lustreless, thin-limbed, abdomen protuberant. P/R/T—130/34/100°F; the spleen was palpable 3″ below the costal arch and firm; the liver was palpable up to the right iliac fossa. Haemic murmur audible over the mitral and pulmonary areas.

Examination of the blood: Hb.—8 g. per cent; R.B.C.—2·29 m/c.mm.; normoblasts, anisocytes, target cells and poikilocytes were present. W.B.C.—21,500/c.mm. (poly 21 per cent, lympho 72 per cent, mono 6 per cent and eosino 1 per cent). E.S.R.—25 mm./hour. Total protein in blood—4·3 g. per cent, with an albumin: globulin ratio of 2·3:1; W.R. and serum tests for kala-azar were negative.

Roentgenography: Open texture of bones of forearm and hand, no changes in skull.

Case 6—K.P.G., Hindu male, 1 year 8 months old, was admitted for irregular fever and cough for 1 year. He had 4 brothers and sisters, all in good health.

On examination, weak and pale, weight 13 lbs. 10 oz. The spleen was palpable 2 fingers below the costal arch and firm; the liver was palpable 2 fingers below the costal arch and firm. A localised soft systolic murmur was heard in the mitral area.

Examination of the blood: Hb. 32 per cent; R.B.C.—2·2 m/cmm., W.B.C.—12,250/c.mm. (poly 50 per cent, lympho 44 per cent, mono 4 per cent and eosino 2 per cent; normoblasts, anisocytes, poikilocytes and target cells present); E.S.R.—0·5 mm/hour; W.R. and serum tests for kala-azar were negative.

Roentgenography: Mosaic and reticulated bone structure of the metacarpals and phalanges (suggestive of Cooley's anaemia). The radial striations in the cranium were seen only in the frontal bone.

Case 7—S.P., Hindu male, 3 years old was admitted for progressively enlarging abdomen, and irregular fever for 1 year. The child could not walk, but had learned speaking about 2 months back. He was the third of 4 children; the first and second had neonatal deaths.

On examination, weight 9 lb. 9 oz.; emaciated, anaemic; the spleen was enlarged up to the umbilicus and firm; the liver was palpable 2½″ below the costal arch and firm.

Examination of the blood: Hb., 4 g./100 c.c.; R.B.C.—1·25 m/c.mm.; normoblasts, anisocytes, poikilocytes, target cells present. W.B.C.—8,800/c.mm. (poly 52 per cent, lympho 43 per cent, mono 4 per cent and eosino 1 per cent); total protein in blood—4·1 g./100 c.c.; albumin: globulin ratio 2·1:1; urea—30 mg. per cent; N.P.N.—21 mg. per cent and cholesterol—117 mg. per cent; W.R. and serum tests for kala-azar were negative.

Roentgenography: Thinning of both tables in cranial bones. All bones and vertebrae showed open bony texture and trabeculations.

Case 8—R., a Hindu male, 8 months old, was admitted for irregular fever and progressive enlargement of the abdomen for 1 month. He was the youngest of 4 children (one dead of bronchopneumonia, rest healthy).

On examination: weight 12 lb. 4 oz., weak pale child, slightly icteric and severely anaemic. The spleen was palpable 4″ below the costal arch and firm; the liver was palpable 2″ below the costal arch and firm; pulse was 130 per minute.

Examination of the blood: Hb.—6 g./100 c.c., R.B.C.—2·28 m./c.mm; normoblasts, target cells, anisocytes, and poikilocytes present. W.B.C.—44,200/c.mm. (poly 20 per cent, lympho 72 per cent, mono 6 per cent and eosino 2 per cent); W.R. and serum tests for kala-azar were negative; W.R. of mother was also negative.

Roentgenography: Hand, metacarpals and phalanges show open texture. Skull shows no changes. Accelerated growth of ossification centres in the carpal region.

Case 9—P.K.D., Hindu male, 1½ years old was admitted for irregular fever for 4 months and irregular enlargement of the abdomen for 6 months. The patient was the younger of 2 children. The other was healthy.

On examination: a weak pale child, thin-limbed, with protuberant abdomen. The spleen was palpable 2″ be-

low the costal arch and firm; the liver was palpable 2" below the costal arch and firm; pulse was 130 per minute; a localised soft systolic murmur was present in the mitral area.

Examination of the blood: Hb. 6·5 g. per cent; R.B.C. 2·2 m/c.mm., normoblasts, target cells, poikilocytes and anisocytes were present. W.B.C. and 16.100/c.mm. (poly 49 per cent, lympho 46 per cent, mono 3 per cent and eosino 2 per cent); fragility started at 0·44 per cent and was over at 0·28 per cent; W.R. and serum tests for kala-azar were negative. Total protein—4 g./100 c.c. of blood; albumin : globulin ratio 2 :1.

Roentgenography: Metacarpals and phalanges show open texture typical of Cooley's anaemia.

Case 10—A.M., Hindu male, 1 year 3 months old, was admitted for fever 1 year, and vomiting 5 months. No suggestive family history.

On examination: weight 13 lb. 5 oz.; weak anaemic child; the spleen was palpable 2" below the costal arch and firm; the liver was palpable 4½" below the costal arch and firm.

Examination of the blood: Hb.—22 per cent; R.B.C.—1·32 m/c.mm.; normoblasts, anisocytes, poikilocytes, target cells were present. W.B.C.—25,000/c.mm. (poly, 30 per cent) lympho 64 per cent, mono 4 per cent and eosino 2 per cent); W.R. and serum tests for kala-azar were negative.

Roentgenography: Small bones of hands and lower ends of radius and ulna showed decalfication with open bony texture as in Cooley's anaemia; the skull bones show no changes.

Case 11—B., Hindu male, 10 months old, was admitted for fever off and on over a period of 4 months.

On examination: weak and severely anaemic; P/R 130/30. The spleen was palpable 3 fingers below the costal arch and firm; the liver was palpable 2 fingers below the costal arch and firm.

Examination of blood: Hb.—34 per cent; R.B.C.—1·73 m./c.mm. ,normoblasts, anisocytes, poikilocytes and target cells were present. W.B.C.—11,000/c.mm. (poly 60 per cent, lympho 35 per cent, mono 3 per cent and eosino 2 per cent).

Roentgenography: No definite bony changes characteristic of Cooley's anaemia were seen.

Discussion

All the 11 cases described above do not conform to every detail of the classical description. As Cooley (1950) said, there are no absolute criteria for recognition of the disease, and the diagnosis depends upon the summation of several characteristics. All our cases were Indians and 9 of them were Bengalees. Age incidence varied from 8 months to 16 years. In contrast with the prevailing view of equal occurrence in male and female, 10 of our cases were males and only 1 female. However the number of cases are too small for generalisation. Incidentally, all the 5 cases of Pirzada and Kapur (1951) were males. Typical mongoloid feature was observed in 3 patients only, and in one there was only a tendency to the same. In the rest no mention is made about this point, so either they were absent or were overlooked.

As regards the changes observed in the peripheral blood in these cases the following points may be mentioned:

(*a*) The haemoglobin varied between 3 and 9 g. per cent of blood.

(*b*) Reticulocytes, normoblasts, target cells, anisocytes and poikilocytes were present in all cases; leptocytes were looked for, and found in 3 cases.

(*c*) W.B.C. count per c.mm. varied between 4,500 and 44,200; all the leucocyte counts below 10,000/c.mm. were found in patients above 10 years of age, with one exception (Case 7).

(*d*) In each case there was a progressive fall of Hb. and R.B.C. count. Liver and/or iron therapy failed to produce any improvement. Changes in the direction Cooley's anaemia—Cooley's trait (Daland and Strauss, 1946)—are present quite frequently in a family where Cooley's anaemia occurs; in the only two cases where the family could be investigated, Cooley's trait was present (Cases 1 and 2).

The bony changes, may occur first in the skull or in the long bones. However, in 4 of our cases (Nos. 5, 8, 9 and 10), changes have occurred in the long bones and not in the skull which presumably would follow later. All these children were below 1½ years of age. The opposite, i.e., skull changes occurring before long bone changes did not occur even in a single case of our series. This limited evidence points in the direction of long bone changes occurring before the skull changes.

In all, skull changes were present in 6 cases and absent in 5; long bone changes were present in 9 cases not observed in 1 case and absent in another.

Summary

1. Eleven cases of Cooley's anaemia amongst Indians have been presented and discussed.

2. The sex incidence is predominantly male in our series in contrast with the previous view of equal sex incidence.

3. The few cases where W.B.C. count was comparatively low (below 10,000) were almost all over 10 years of age.

4. Characteristic bony changes had occurred in the long bones, without coexisting skull changes, in 4 cases. The reverse was not seen.

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REFERENCES

BYWATERS, E. G. L.—*Arch. Dis. Childhood*, **13** : 172, 1938.
CAFFEY, J.—*Am. J. Roentgenol.*, **37** : 258, 1937.
CHANDA, N. K. AND CHAUDHURI, K. C.—*Indian J. Paediat.*, **17** : 89, 1950.
CHAUDHURI, K. C.—*Indian J. Paediat.*, **14** : 76, 1947.
COELHO, G.—*Med. Bull.*, **7** : 291, 1939.
COOLEY, T.—Brenneman's Practice of Paediatrics, 1950, Vol. 3, Ch. IV.
DALAND, G. A. AND STRAUSS, M. B.—*Blood*, **3** : 430, 1940.
DAMASHEK, W.—*Am. J. M. Sc.*, **205** : 643, 1943.
DHAYAGUDE, R. G.—*Am. J. Dis. Child.*, **67** : 210, 1944.
FOSTER, L. P.—*Am. J. Dis. Child.*, **59** : 828, 1940.
MALHOTRA, R. P. AND CHUTTANI, P.—*Indian M. Gaz.*, **79** : 198, 1944.
MUKHERJI, M.—*Indian J. Paediat.*, **5** : 1, 1938.
NAPIER, L. E., SHORTEN, J. A. AND DAS GUPTA, C. R.—*Indian M. Gaz.*, **74** : 660, 1939.
PATEL, D. AND BHENDE, Y. M.—*Indian J. Paediat.*, **6** : 217, 1939.
PATEL *et al*—Quoted by Chandra and Chaudhuri (1950).
PIRZADA, M. A. AND KAPUR, P. N.—*Indian M. Gaz.*, **86** : 150, 1951.
RUDD, C., EVANS, P. J. AND PERRY, A. L. D.—*Brit. J. Ophthal.*, **37** : 353, 1951.
SMITH, C. H.—*Am. J. Dis. Childhood*, **65** : 681, 1943.
STILES, M. A., MANLOVE, C. A. AND DANGERFIELD, C. D.—*Northwest Med.*, **46** : 23, 1946.
TYAGI, G.—Fourth Annual Conference of Indian Association of Pathology, Gwallior, 1953.
WANG, C. Y. AND KHOO, F. Y.—*Chinese M. J.*, **58** : 177, 1940.
WHITBY, L. E. H. AND BRITTON, C. J. C.—Disorders of the Blood, 1952, J. A. Churchil, London.
WOLMAN, I. J. AND DICKSTEIN, B.—*Am. J. M. Sc.*, **212** : 723, 1946.

OPTOCHIASMAL ARACHNOIDITIS

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Lesions affecting the optic chiasma and the optic nerves are many and their primary symptom is dimness of vision. In the differential diagnosis of these lesions, compression of the chiasma and optic nerves by adhesive arachnoiditis must be considered as in proper cases surgery has been found beneficial. Arachnoiditis of the chiasmal region as a cause of dim vision is now a recognised clinical entity though still controversy exists as to the extent to which arachnoiditis by itself is the cause of clinical signs.

Inflammation of the arachnoid leading to adhesions and causing symptoms was recognised quite early.

The purpose of this paper is to bring to the fore the importance of bearing in mind the occurrence of optochiasmal arachnoiditis in the diagnosis of lesions leading to a gradual dimness of vision. By timely diagnosis and surgical intervention, vision can be saved from deterioration and some lost vision may be restored.

AETIOLOGY

Trauma to the base of the skull may lead to optochiasmal arachnoiditis. Holmes (1929) and Goldsmith (1943) have reported such cases. The direction of the force of injury, the nature of injury or its intensity do not seem to play an important part. Considering the enormous number of cases of head injuries, the occurrence of optochiasmal arachnoiditis, following head injury seems to be very small. Probably the head injury acts only as a predisposing cause.

Infection plays an important part in causing arachnoiditis. In all meningitis, pneumococcal, or tuberculous, extensive basal adhesions may form and the optochiasmal arachnoiditis may be a part of this process. In tuberculous meningitis, the adhesions may be confined to the optochiasmal region. Yuhl and Rand (1951) have reported a case of optochiasmal arachnoiditis caused by tuberculous meningitis.

Syphilis has been mentioned as cause of optochiasmal arachnoiditis in about 15 per cent of cases (Bollach *et al*, 1937).

CASE REPORT

Case 1—Appu, male, aged 40 years, NS 1184, was admitted in Dec. 1952 in the Government Ophthalmic Hospital, Madras, with a complaint of pain behind the eyes and gradually increasing dimness of vision. On examination, the patient had primary optic atrophy of both the eyes. The pupils were moderately dilated and sluggishly reacting to light. The acuity of vision was only hand movements in both the eyes. X-rays of the skull were normal. Blood WR was negative. CSF biochemistry was normal and CSF WR was negative.

Because of the headache, dim vision and optic atrophy, it was decided to explore the region of the optic chiasma. A right frontal osteoplastic flap was turned under endotracheal anaesthesia. The dura was opened and the frontal lobe was gently lifted from the anterior cranial fossa. There was no tumour in the pituitary fossa, but the chiasmatic cistern was obliterated and the optic

chiasma and the optic nerves were bound down by fairly thick whitish adhesions of the arachnoid (Fig. 1).

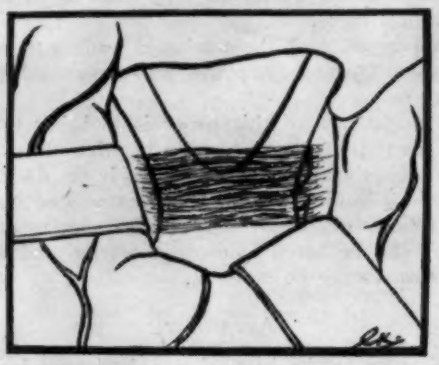

FIG. 1.—(DIAGRAMMATIC) SHOWING FAIRLY THICK ADHESIONS BINDING DOWN THE OPTIC CHIASMA AND THE OPTIC NERVE.

These were released carefully and the wound was closed in layers.

Post-operatively, the patient had some improvement in his vision but he was happy that the rapid deterioration in his vision had been arrested. Followed up two years later, the patient reported that he had not deteriorated in his vision, though he had not gained much.

Case 2—A.R., male, aged 24 years, NS 3154, was admitted in December 1953 in the Government Ophthalmic Hospital, Madras, with a complaint of gradually increasing dimness of vision of both eyes since 4 months. 4 months ago the patient found that the sight in the left eye was getting dimmer. This progressed till vision was lost in the left eye and only perception of light remained in the right eye.

On examination, the following findings were noted :

Eyes : Right eye—cornea clear; tension normal; pupils reacting to light, left eye—cornea nebulae present; tension normal; pupils sluggishly reacting to light. Fundus : Both eyes showed secondary optic atrophy. Fields of left eye could not be taken. Right eye field showed a contraction to less than 10 degrees in circumference.

Blood : Kahn—Positive strong; WR—positive.

X-ray of the skull showed slight widening of the pituitary fossa.

Lumbar puncture showed increased pressure; the C.S.F. cell count was 1 per c.mm.; total proteins were 30 mg. per cent.

No other neurological abnormality was present. Because of the findings of (1) dimness of vision, (2) secondary optic atrophy, and (3) a slightly enlarged pituitary fossa, it was decided to explore the optochiasmal region to exclude a tumour in the sella.

Anaesthesia was endotracheal, induced by intravenous pentothal and scoline, maintained by gas and oxygen. A small right frontal osteoplastic flap was made, avoiding the frontal sinuses. The dura was tense. The right lateral ventricle was aspirated and 60 c.c. of C.S.F. was removed. This made the dura lax and it was opened. The frontal lobe was gently elavated from the anterior cranial fossa after controlling a troublesome bleeding vein near the sagittal sinus. The posterior half of the frontal lobe was found adherent to the dura on the base of the skull by thin adhesions containing numerous C.S.F. pockets. These were broken open and the pitnitary fossa was approached. Both the optic nerves and the optic chiasma were found adherent to the anterior cranial fossa by the same type of adhesion (Fig. 2) with numerous C.S.F. cysts. These were

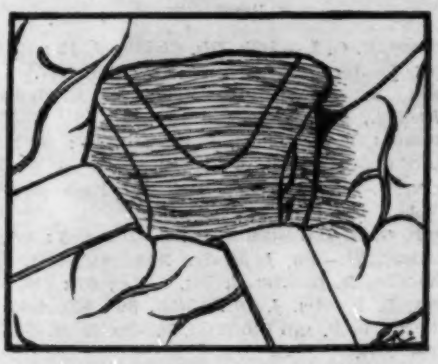

FIG. 2—(DIAGRAMMATIC) SHOWING EXTENSIVE ADHESIONS BINDING DOWN THE OPTIC NERVE AND THE CHIASMA TO THE ANTERIOR CRANIAL FOSSA.

gently removed. The lamina terminalis which was found bulging was opened to allow drainage of the third ventricle so that the increased intracranial tension might be reduced. After freeing the right optic nerve as far as possible, the wound was closed in layers. Two weeks after surgery, the patient reported good improvement in his vision. Two months after, the fields showed enlargement. Though not much, this was gratifying and the patient was now able to pursue his occupation of farming without difficulty.

DISCUSSION

Arachnoiditis may occur around small tumours and leaking aneurysms in the chiasmal region. That is not considered here.

When arachnoidal adhesions occur in the base of the brain they may often be confined to the region of the optic nerves and optic chiasma. The adhesions may be extensive and strong, binding down the optic nerve and chiasma to each other, to the surrounding blood vessels and to the base of the brain. There may be strong bands with filmy adhesions in between. In the mild cases, there may only be an arachnoid veil with strands passing over the nerves and blood vessels. Occasionally, C.S.F. cysts form between the adhesions and form a very important factor in compressing the chiasmatic structures. The adhesions themselves are avascular though they cause congestion

and hyperaemia of the structures which they envelop. The optic nerve and chiasma are found to be injected.

Though the arachnoiditis is part of a generalised basal meningitis, often it is found only in the chiasmatic region. Occasionally the arachnoiditis may surround only one optic nerve and act like a cuff. Bollach's paper contains semi-diagrammatic pictures representing the various types of lesions that have been found in the region. The condition in cases reported above varied. In one case it was an extensive arachnoiditis, binding the whole chiasmatic region to the base of the brain, whereas in the other only the chiasma was involved.

In the second case, though the blood WR and Kahn were positive, the C.S.F. was negative. But still there is a strong possibility that the arachnoiditis was syphilitic in origin. In addition the pituitary fossa showed enlargement because of the increased intracranial tension, though usually it is not the case in optochiasmal arachnoiditis.

Moore and Woods (1940) have discussed the problem of optochiasmic arachnoiditis as a cause of optic atrophy in a paper on syphilitic optic atrophy. For a long time the idea has existed that not all cases of primary optic atrophy in syphilitics were due to tabes dorsalis. It was felt that in these cases optic atrophy may be due to pressure by means of adhesions round the chiasma.

In a patient with known syphilis, if the arachnoiditis is localised to the optic chiasma region, the resulting clinical picture is one of primary optic atrophy. Such a patient is almost always diagnosed as a case of parenchymatous syphilis. In such cases, the danger of blindness may be averted by surgical intervention.

Syphilologists now seem to be agreed that the cases that must be recommended for surgical exploration are those neurosyphilitics in whom the optic atrophy appears as an isolated phenomenon.

Visual failure is the important and very often the only symptom. The mode of onset and progress vary greatly. One eye is affected first and then the other, though bilateral onset has also been noted. The changes in the field of vision also vary greatly. In the French series, 29 per cent had hemianopia, 23 per cent had concentric contraction and 31 per cent had central scotoma. There is a marked tendency for early deterioration of central vision and hence paracentral or central scotoma are common.

The fundus changes are usually those of primary optic atrophy though postneuritic optic atrophy may be seen. Vail (1938) insists that a mixed type of atrophy occurs and is diagnostic. In our case, optic atrophy was the predominant clinical picture.

Extra-ocular symptoms are rare. Headache may occur in mild or severe form. This may be frontal or retro-orbital. Occasionally symptoms of pituitary disturbance have been noted, e.g., increased thirst, appetite and polyuria, and obesity. The C.S.F. and radiological findings are essentially normal.

The diagnosis of optochiasmal arachnoiditis is often suspected, but confirmation is not possible before operation. Differentiation from pituitary and parasellar tumours is often possible by negative x-ray findings and the irregularity of visual fields, Pneumo-encephalography may be of great value. This often shows a distortion of the anterior end of the third ventricle and of the chiasmatic cistern.

Optochiasmal arachnoiditis is often an operative finding and the diagnosis is confirmed only then. When there are definite adhesions, release often arrests the progress of blindness and some vision may return. Occasionally the process has been known to deteriorate again. Complete recovery of vision is not possible.

Bruetsch (1948) feels that arachnoidal adhesions alone cause atrophy of only the superficial fibres, and that the optic atrophy is most likely the result of the primary morbid process either inflammatory or degenerative which implicates both the optic nerve and the arachnoid in variable proportions. The moderate degree of recovery only that is seen in operated cases of optochiasmal arachnoiditis may substantiate the above statement, but there is no doubt about the benefit to vision that these patients derive from surgery and the patients are grateful however slight the recovery may be.

References

Bollach, David, and Puresch—Les Arachnoiditis Opto chiasmatiques. 1937. Published by the French Ophthalmic Society, Paris.

Bruetsch, W. L.—*Arch. Neurol. Psychiat.*, **59**: 215, 1948.

Goldsmith—*Proc. Roy. Soc. Med.*, **36**: 163, 1943.

Holmes, G., 1929—Internation. Ophthalmological Congress, **3**: 65, 1939.

Moore, J. L., and Woods, A. C.—*Am. J. Syph.*, **74**: 59, 1940.

Vail, D.—*J. Am. Ophth. Soc.*, 1938.

Yuhl, E. T. and Rand, C. W.—*J. Neurosurg.*, **8**: 441, 1951.

INCIDENCE OF PROTOZOAL AND HELMINTHIC INFECTIONS OF THE INTESTINE†

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During the last 6 years from 1948-1953, 10979 samples of faeces were examined at Kanchrapara Tuberculosis Hospital. One saline and one iodine smear were examined in each case. The samples were more or less unselected and may be considered as random ones. They were obtained from the patients admitted to this hospital for pulmonary tuberculosis and not for any bowel complaints and from the staff from officials down to daily labourers.

Table 1 shows the incidence of the infections on year to year basis during the 6 years from 1948 to 1953. Out of 10979 samples, 8724 (79·5 per cent) were from male patients and 2255 (20·5 per cent) were from female patients.

TABLE 1. DISTRIBUTION OF PROTOZOAL AND HELMINTHIC INFECTIONS.

Year	Cases	E. histolytica	Giardia	Non Pathogenic organisms	Ascaris	Hookworm	Strongyloides	Trichuris	Taenia
1948 ..	452	32	24	64	12	5	3	6	—
	%	7	5·3	14	2·7	1·1	0·7	1·4	—
1949 ..	1805	275	154	52	110	18	13	13	—
	%	15·2	8·5	2·8	6·2	1	0·7	0·7	—
1950 ..	1674	241	158	11	59	15	2	1	—
	%	14·4	9·4	0·7	3·5	0·9	0·1	0·05	—
1951 ..	1830	230	165	41	59	11	8	3	2
	%	12·6	9	2·2	3·2	0·6	0·4	0·1	0·1
1952 ..	2198	275	166	83	43	15	11	2	1
	%	12	7·5	3·8	1·9	0·7	0·5	0·1	0·05
1953 ..	3020	193	151	51	32	15	4	3	4
	%	6·4	5	1·6	1	0·5	0·1	0·1	0·1
Total for 6 years.	10979	1246	818	302	315	79	41	28	7
	%	11·3	7·5	2·8	2·9	0·8	0·4	0·3	0·6
Male (Total)	8724	825	540	208	225	66	35	25	7
	%	9·5	6·2	2·4	2·6	0·8	0·4	0·3	0·08
Female (Total)	2255	421	278	94	90	13	6	4	—
	%	18·6	12·3	4·1	4	0·6	0·3	0·2	—

† Based on a study at the Kanchrapara Tuberculosis Hospital, West Bengal.

Fig. 1 shows graphically the rate of *E. histolytica* and *Giardia intestinalis* infection during

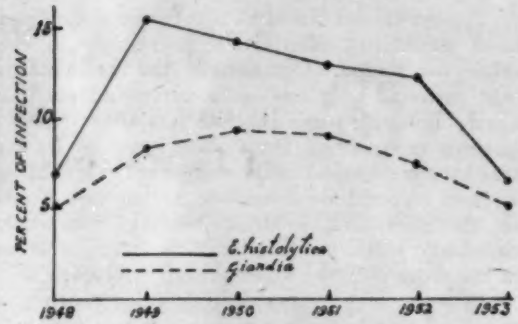

FIG. 1.

the 6 years from 1948-53, and in Fig. 2 the same is shown in the male and female separately.

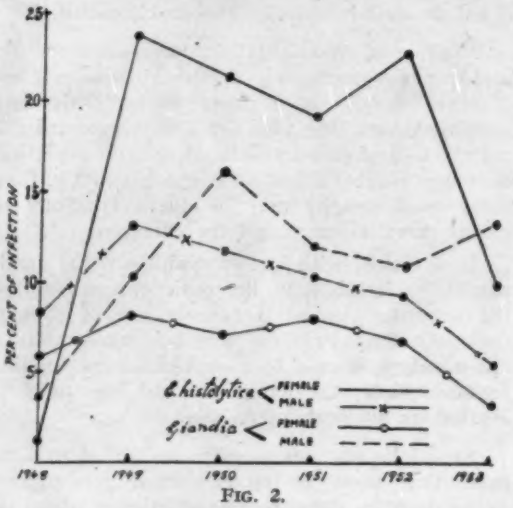

FIG. 2.

DISCUSSION

It is evident from Table 1 that out of 10979 cases, 2366 (21·6 per cent) cases showed protozoa, and 471 (4·5 per cent) cases showed helminths in their stools. In many cases protozoa and helminthic infections were combined. Among the cases of protozoal infection 11·3 per cent had *E. histolytica* (trophic or/and cyst), 7·5 per cent had *Giardia intestinalis* (mainly cysts), and 2·8 per cent showed non-pathogenic protozoal infections. Chaudhuri and Rai Chaudhury (1946) reported *E. histolytica* in 8·8 per cent and *Giardia intestinalis* infection in 5·2 per cent of cases after examining 9015 samples from unselected patients in a period of 10 years. Gupta *et al* (1954) after examining

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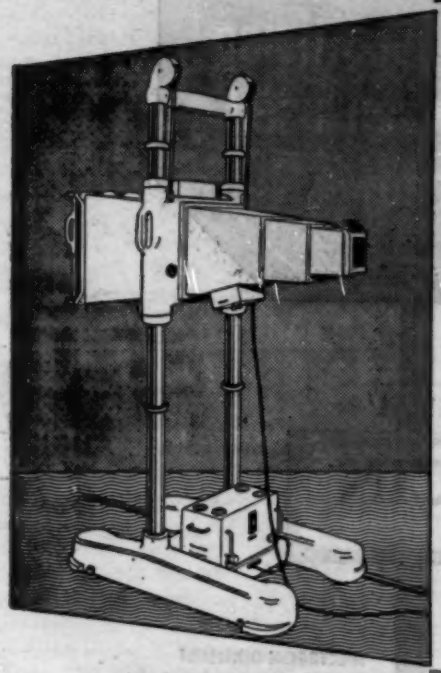

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the faeces of 1300 patients at Calcutta, showed protozoa in 44 per cent of cases among which 11·1 per cent showed *E. histolytica*, 14·7 per cent *Giardia intestinalis* and non-pathogenic protozoa were present in 18·7 per cent of cases. Anand (1954) after examining the faeces from 600 persons showed the presence of *E. histolytica* in 15·5 per cent in Rajasthan. Hunter *et al* (1951) in an epidemiological survey of intestinal parasites in 919 individuals of Southern Korea reported the incidence of infection of *E. histolytica*—5 per cent, *Giardia intestinalis*—3·5 per cent and non-pathogenic protozoa—36·2 per cent. In a similar survey of Okinawa and Ryukyu islands (1951a) they showed the incidence of *E. histolytica* infection in 13·4 per cent of cases.

From Table 1 it seems that the incidence of protozoal infection in the female is almost twice that in the male. It was difficult to obtain samples from the females unless they had some severe bowel complaints, whereas, in males it was possible to get samples from almost every case asked for (only 20·5 per cent of all samples were from female patients). Both the factors might have been operating together. We are of the opinion that this factor was mainly responsible for the noted higher incidence of infection in the females.

As regards the intestinal helminths, *Ascaris lumbricoides* has been found in the largest number of cases, the rate of infection being 2·9 per cent (Table 1). It has also been found to be more common in females than males. Hookworm infection has been found in 0·8 per cent of cases. Next in frequency comes *Strongyloides stercoralis* and *Trichuris trichiura* (whip worm) the rate of infection being 0·4 per cent. Hunter *et al* (1951) showed the incidence of helminthic infections in Korea as follows: Ascaris—82·4 per cent, whip worm —81·1 per cent and hook worm—46·5 per cent ; *S. stercoralis* was seldom seen. The rates were extremely high.

Out of 10979 samples, ova of Taenia was found in 7 cases (0·6 per cent), all being male sweepers. Subsequently segments of *Taenia solium* were found in the faeces of these persons.

ACKNOWLEDGMENT

We wish to express our thanks to Dr. S. K. Ganguli, Superintendent of this hospital for allowing us to publish this paper, and to Dr. P. C. Sen Gupta, Officer-in-charge, Kala-azar Research, Calcutta School of Tropical Medicine for his help and valuable advice.

REFERENCES

ANAND, B.R.—*J. Indian M. A.*, **23** : 398, 1954.

CHAUDHURI, R. N., AND RAI CHAUDHURY, M. N.—*Indian M. Gaz.*, **81** : 230, 1946

GUPTA, S. K., MUKHERJEE, A. M., AND NEOGI, K. N.—*Bull. Calcutta School of Trop. Med.*, **1** : No. 3, 1954.

HUNTER III, G. W., RATCHIE, L. S., CHANG, I. C., KOBAYASHI, H., ROLPH (JR.), W. D., MASON, H. C., AND SZEWCZAK, J.—*Japan Logistical Command Bulletin*, No. 2, 1951.

HUNTER III, G. W., RITCHIE, L. S., PAN, C., AND LIN, S.—*Japan Logistical Command Bulletin*, No. 2, 1951a.

REFRESHER COURSE

BURNS AND THEIR MANAGEMENT

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Burn is a common accidental household injury caused by heat, in which coagulative necrosis of the tissues occurs. Scald is a type of burn caused by moist heat. Most of these burns are preventable and are curable by proper assiduous management.

Burns are commoner in classes with low social and economic status. The incidence of burns in adults is greater in women. The kitchen fire being on the ground level with shelves high above combine frequently to cause accidental burns to women during cooking.

Classification—More commonly burns are classified by depth. The most simple and efficient classification is to divide burns into two types: (1) Partial or superficial, where the depth of the burn is up to corium ; (2) Complete or deep, where the burn is deeper, may be up to the bone.

In superficial burn the deep parts of sweat glands, sebaceous glands and hair follicles are intact and the epithelium is able to grow and cover the surface. In deep burn no epithelial elements survive and hence skin grafting becomes necessary. Superficial burns are very painful as nerve terminals are exposed to the external agents.

Physiology of burns—For the proper treatment of burns, one requires to know the physiological derangements incidental to thermal trauma. The extensive damage and destruction of the body surface produced by heat is always serious. Shock is produced following burns.

The severity of shock is directly related to the extent of burn. For rough calculation of the extent of burn, the so-called 'Rule of Nine' is very useful. The extent is calculated in terms of percentage of the body surface. The area of palm is equivalent to 1 per cent of the total body surface. By Rule of Nine the body surface is divided into different sections representing nine per cent or its

multiples. Head, face and neck and one upper limb 9 per cent each ; front of trunk, back of trunk and one lower limb 18 per cent each.

Any person having burns of at least 15 per cent of body surface is expected to develop shock. About two-thirds of the deaths due to burns are from shock, hence considerable attention is devoted to the understanding of causes contributory to the production of shock. A reduction in the blood volume, and toxins, pain and cold are important factors in the production of shock.

Circulatory failure and plasma loss—Early changes can be compared to the classical picture of traumatic shock. Burn damages an immense number of small blood vessels and is followed by capillary dilatation with escape of great quantities of plasma, which gets either locked into the blister or in the tissue spaces. The escape of plasma is rapid in the first eight hours after injury, and continues for two days. This is first manifested by reduction in plasma volume and later by reduction in extravascular extracellular fluid ; and as this fluid contains sodium chloride and sodium bicarbonate, the shift of extracellular fluid into the burnt area represents a loss of sodium salts and water. As the water and salt in the cells cannot be drawn to mitigate this, the volume of intracellular fluid does not change appreciably.

With fall in the circulating volume of blood, vasoconstriction of the peripheral blood vessels starts as a compensatory mechanism, by which the vital organs are adequately supplied with blood, but eventually this compensatory mechanism fails. The blood changes accompanying this phenomenon are : increased viscosity, haemoconcentration, a shift of sodium and chlorides from plasma to cells and potassium from cells to plasma, a rise of non-protein nitrogen, and a lowering of carbon dioxide combining power.

Hypoproteinaemia—Whenever nine per cent or more of the body surface is burnt, serious nutritional problems develop. Protein supplied to and retained by these patients is small. Often there is severe vomiting. Body reserve of proteins gets exhausted quickly. Urinary nitrogenous wastes, tissue breakdown, wound exudations and tissue repair, all contribute to the protein depletion. Fever and infection further magnify the nutritional problems.

Anaemia—Anaemia rapidly develops in a patient who survives the initial period of shock. It is progressive.

Toxaemia—After the stage of shock, there follows in a small percentage of cases symptoms resembling acute intoxication characterised by fever, mental disturbances, albuminuria and tachycardia. Fall of plasma proteins and rise of blood urea are also found. Icteric index may be raised and in necropsy, degenerative changes are found in all organs, especially in the liver. The cause is still a matter of dispute. Liberated histamine, products of tissue necrosis, globulins, altered enzymes and many other substances have been mentioned as possible toxic agents.

Urine—The urinary output is markedly reduced in every severe burn. This results directly from decreased blood flow through the glomeruli. Anuria is a constant threat if untreated. The specific gravity is raised. Reaction is generally acid. Albumin, acetone and haemoglobin may be present in the urine.

Clinical Course

The clinical course of an extensive burn may exhibit five distinct stages : 1. Vasovagal or primary shock ; 2. Secondary shock ; 3. Acute toxaemia ; 4. Sepsis and 5. Healing.

Primary shock—It starts immediately after injury and may last for 1-2 hours. It is characterised by fall in blood pressure along with slow pulse with poor volume. Haemoconcentration is absent. The patient complains of cold, thirst and nausea but not pain. Usually spontaneous recovery takes place.

Secondary shock—This usually begins within 30 minutes to 12 hours. The patient becomes restless and anxious. Thirst is extremely severe, and more so as vomiting occurs at each attempt at swallowing. The skin becomes pale or cyanotic, cold and clammy. There is progressive fall of blood pressure, diminution of pulse pressure with rise of the pulse rate. Later severe fall of B.P. leads to diminished oxygen supply to important centres. If treatment is not available at this stage a fatal issue is inevitable.

Acute toxaemia—The onset of toxaemia may be insidious or sudden between 6 and 60 hours, but is usually between 36 and 48 hours. The temperature rises. The patient becomes restless and confused, the skin and mucous membranes show cyanosis, vomiting occurs, often containing altered blood. Blood pressure falls, blood urea and icteric index are raised, urine is scanty, dark, containing albumin, casts and bile pigments. If recovery ensues, jaundice may appear, but other toxic manifestations disappear slowly.

Sepsis—Sepsis is likely to be severe in deep burns when sloughs are in the process of separation.

Healing—Superficial burns heal completely within three weeks if not complicated by sepsis. The growth of epithelium from hair follicles, sweat glands and sebaceous glands, covers the surface.

In deep burn, after the separation of sloughs a granulating surface remains if the surface is big and not covered by skin graft. Fibrosis takes place in the base of granulation tissue with contracture and an ugly irritable scar is the end result. Earlier a granulating area is covered with skin graft, the less is the likelihood of fibrosis and contracture formation. Though the clinical condition is described in different phases, these do overlap with one another, and all phases may not be present in one individual.

Management

First aid—As burns are usually accidental, and as the patient in an attempt to prevent the spread of burn often runs about, he is likely to meet with other injuries also. The patient should be brought in the fresh air, and if unconscious and suffocated, artificial respiration should be started immediately. As the attention is mainly drawn to burns, associated injuries are often not thought of. One should always look out for them. Instead of dressing the patient, it is preferable to shift him to the nearest hospital after covering the area of burn with a sterile or a freshly washed cloth. If the time required for the transit is long hypodermic injection of morphine sulphate gr. ¼ should be given and a label indicating the time, amount and route of administration of morphia, should be attached to the patient.

General treatment—Patients with burns of less than 9 per cent are not in severe shock. They can take their fluid requirements by mouth and the prognosis is good. Every case of burn should be given prophylactic injection of tetanus antitoxic serum 1500 I.U. The patient should be put to bed, covered with sterile cloth and the foot of the bed raised. Putting a cradle with blanket is all that is required to maintain body heat. Artificial heating in our country unless carefully supervised and regulated, is likely to be overdone and becomes a source of great discomfort. Drinks of tea, coffee or orange juice should be encouraged. Pulse, temperature, respiration and blood pressure should be regularly recorded.

Sedative—A patient with burn is in agony and especially so when the burn is of superficial type. Morphia is a boon to such patients. If opium or morphia has not been given before a hypodermic injection of morphine sulphate gr. ¼ repeated after 3 hours, if necessary, or Tr. Opii 15 minims by mouth repeated after three hours, if necessary, or injection of morphine sulphate gr. ⅙ slowly intravenously can be given. Morphia may accumulate at the site of injection during shock due to sluggish circulation and when the patient recovers after 48 hours this depot morphia may enter the circulation and may cause morphine poisoning, so it is preferable to give morphia intravenously, provided it is given very slowly.

Fluids—In all patients with burn of more than 9 per cent of body surface, fluid replacement by equal proportion of plasma and saline by intravenous route is necessary. Children are not able to excrete saline in higher concentration and so to them glucose 5 per cent and sodium chloride 0·18 per cent should be given in place of isotonic saline. In cases of deep burn the chances of anaemia are great. In these patients blood, plasma and saline should be given in equal proportions. Various methods of calculating the dose of plasma have been employed. In burn of less than 30 per cent of surface area the following guide may be followed (Table 1)

Table 1—Fluid Therapy in Burn with Involvement of 0 to 29 per cent Surface Area.

Age	Electrolyte solution (ml.)	Plasma (ml.)
Upto 3 months	7	7
3—6 ,,	10	10
6 months—1 year	13	13
1—2 years	15	15
2—3 ,,	21	21
3—4 ,,	24	24
4—5 ,,	27	27
5—6 ,,	31	31
6—7 ,,	35	35
7—8 ,,	40	40
8—9 ,,	44	44
9—10 ,,	46	46
11—12 ,,	56	56
12—13 ,,	62	62
13—14 ,,	67	67
14—15 ,,	78	78
15—16 ,,	88	88
16—17 ,,	96	96
17—18 ,,	104	104
over 18 ,,	110	110

In burns of more than 27 per cent of body surface the fluid given according to this formula exceeds the safety limit of expansion of tissue space. The safety level in these cases is equivalent to 10 per cent of body weight. The amount of fluid arrived at by this formula, is to be given in 48 hours, ⅓ in 8 hours, ⅓ in 9-24 hours and ⅓ in 25-48 hours. There is still no agreement between different authors regarding the amount of saline to be given intravenously. So authors do not advocate more than one pint of saline unless there is vomiting or diarrhoea. Blood pressure may

serve as a rough guide, when the blood pressure is normal, i.e., before the shock has set in, one pint of plasma is given in about 20 minutes, followed by a second pint at a slower rate. After one hour if the B.P. is low additional two pints are transfused rapidly followed by slow transfusion for at least 12 hours. If the blood pressure remains normal local treatment is started.

One should guard against overtransfusion, that might occur if one is too enthusiastic. Neck veins should be scrutinised for prominence and the lung bases examined periodically for congestion.

Route of administration of fluids—Often the patient is in such a severe shock that the veins are completely collapsed. In children and in patients with severe shock open method or intramuscular or hypodermic route may be chosen preferably mixed with a hyaluronidase.

The rectal route may be used with advantage for saline drip. Glucose water and fruit juice should be given by mouth if there is no vomiting. The best check on the efficiency of fluid therapy is the hourly renal output. Kidney output is low during the stage of shock but once the shock is controlled renal output should be around 50 c.c. per hour. A level of less than 30 c.c. per hour indicates inadequacy of fluid therapy.

Suprarenal cortical extract—Clinicians have reported from time to time improvement in circulatory collapse following the administration of suprarenal cortical extract, though the drug does not exert any direct effect on the capillaries.

Plasma substitutes—Recently new drugs have come into prominence as plasma substitutes. Polyvinylpyrrolidone is a synthetic water soluble polymer of acetylene used in 3·5 per cent solution. It is not metabolised in the body. 70 per cent or more is excreted in the urine. About 50 per cent is excreted in the urine in first 24 hours. The other is a polysaccharide, a polymer of glucose molecules. Only 10 per cent of it is lost in urine in the first 24 hours and 60 per cent remains in circulation for a day or longer. There is less wastage in the urine, and a smaller volume is required to produce a particular effect. These drugs cause aggregation of red cells, thereby interfering with blood grouping. To avoid this a sample of blood should be withdrawn before the plasma substitute is injected.

The daily fluid requirements should be continued either by mouth or intravenously if vomiting is present.

Control of infection—In every case of extensive burn, in spite of great care infection sets in, which can be controlled by early administration of penicillin 100,000 six hourly intramuscularly, or in the plasma drip 500,000 units in 24 hours.

Nutrition—Burns produce hypoproteinaemia. So patients should be put on high diet, cheese, milk, fish, eggs and meat should be given, supplemented by vitamins.

Local treatment—Local care should be undertaken only when the general condition is satisfactory and the shock under control. This should be carried out under strict asepsis as for a major operative procedure. Under general anaesthesia or under the effect of morphia the area of burn is exposed, section by section, the surrounding skin and the area of burn is cleaned with normal saline, or preferably 1 per cent (cetyltrimethyl—ammonium bromide) which is a synthetic product, a good detergent, non-smarting, and rapidly lethal to haemolytic streptococci. It is able to sterilise the skin rapidly. The blisters are opened and the raised epidermis wiped off gently. The area is then washed with saline and dried.

After the burnt area is cleaned as above, the patient is put to the bed, resting over the unburnt surface; the area of burn is kept exposed to air and is sprayed with sterile sulphathiazole or sulpha-penicilin powder. The area gradually dries up forming a thin crust in two days. The patient is kept under sedation. Dry crusts do not allow organisms to flourish. Difficulty comes up at the sites of flexion, where the crust may break, and exudation may start. In that case a dressing of sulphanilamide or penicillin ointment with good amount of cotton is used which is changed when soaked.

Systemic administration of penicillin is continued. In a superficial burn the crust separates in the third week leaving healed skin underneath. In deep burn, at the end of third week, the crust should be separated and the area should be grafted immediately. Many factors play a part at this stage, often the area is infected whereby the grafting has to be delayed till the sepsis is controlled. Often the general health of the patient is so low that grafting has to be delayed. The present tendency is to put the graft even in the first week in case of deep burn after cutting the burnt area till good bleeding surface is obtained. If the burn is at the site of joints, e.g., elbow, shoulder, knee, etc. the limb should be immobilised for the first 10 to 12 days, splints may be applied. If the burn does not heal by this time, movements of the joint should be carried out at least once a day to avoid stiffness of the joint. In every case of deep burn at the flexor aspect of the joints and in the neck grafting should be carried out if the area is more than 2 inches in width otherwise healing by fibrosis will result in contracture.

Burns at Special Sites

Fingers and hands—A dry scab contracts and so is likely to compress digital vessels. On the dorsum of fingers, the fat is absent so the tendons, capsule and bones are more vulnerable. Therefore treatment with penicillin ointment and absorbent dressing is preferable to exposure treatment. Fingers should be kept in optimum position, i.e., in a position of holding a cricket ball in the hand. Movements of fingers should be started early.

Face—The burns of the face are best treated by penicillin cream. If the burn be deep, the grafting should be done early in the third or the fourth week.

Eyeballs—Here the main treatment lies in prevention of injury to cornea and adhesion of eyelids. Sterile liquid paraffin drops should be used in the earlier part along with penicillin eye drops.

Often the scar tissue following burn is very irritable. Some persons have a tendency to keloid formation. If this is seen earlier a course of radiotherapy is advisable. In every case of deep burn it is better to anticipate contractures and scarring than to be faced with extensive plastic repair.

ROLE OF PLASTIC SURGERY IN THE MANAGEMENT OF INJURIES AND BURNS

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The first principle in plastic surgery is to replace the lost skin. This loss when replaced immediately is known as primary or immediate skin grafting, and when delayed due to the recipient site being not ready, is termed secondary or delayed. There is no doubt that it is ideal to make up the loss as soon as possible after the injury.

The next point that arises is how to know that the whole thickness of the skin is lost or not. In case of injuries the loss is obvious in most places. In some abrasions or bruises, the depth may not be perceptible. The effects of the injury on the vessels of the deeper layers of the dermis may cause further loss of the skin. In such circumstances time only can show whether the whole skin is dead or not. If the skin is not dead, then in 7-10 days' time the wound will have developing islets of skin.

In case of burns the problem of deciding the depth of skin loss is more difficult. If removal of blistered skin reveals a pale surface, showing regularly spaced red pin points of the vascular dermal papillae, then the deeper layers are still living. In deep burns, the tissues are roasted and the epidermis looks like brown leather. The corium may be fissured to show the underlying fat or muscle. If thick blisters form, the removal of the vesicles show a dead white base with none of the red points.

It is often impossible to decide within first few hours or even days, the exact level of a burn, since the subsequent death of the damaged cells may transform a superficial burn into a deep one.

Tests with ultra-violet rays after fluoride injection have been tried to ascertain the depth of skin loss but the results are not very consistent. So the most useful procedure in all doubtful areas is to wait for the first or second dressing and in 7-14 days' time any skin loss will be obvious.

Time of Grafting

The clinical decision based on the following, is the best guide to the time of grafting.

The primary or immediate skin grafting—In clean injuries and in some deep burns involving small areas the skin loss should be replaced at the time of excising the wounds. This practice will not only save time and working hours, but will also produce less fibrosis and a better scar on the areas concerned. It has been accepted that skin grafts have a definite function in decreasing granulation tissue formation and hence fibrosis.

Delayed or secondary skin grafting—If the raw areas are infected or the depth of the skin loss is not ascertainable, then the wounds are cleaned and dressed with penicillin nonad tulle. After 7-10 days the dressings are changed and the wounds are inspected. If the surface is clean and there are pink granulations then it is time for skin grafting. Ideal conditions for secondary grafting are: (*a*) no sloughs; (*b*) presence of pink granulations; (*c*) the surface of the wound is concave or flush with the surrounding areas; and (*d*) discharges are neither excessive nor greenish.

Whenever there are heaped up granulations it means that skin grafting has been delayed. In such cases, the granulations have to be shaved off before the grafts can be placed.

Discharges from the wounds—Because of the raw surfaces, there is always some infection and discharge of pus. But such infections do not usually affect the skin grafts, except when the pus is greenish due to *B. pyocyaneus*.

To expedite the time for skin grafting of wounds the most important factor is separation of sloughs. Dressing with streptokinase-streptodornase solution removes them in a few days and skin grafting can be done weeks earlier.

Treatment of Injuries with Skin Loss

Local apposition after undermining—Small gaps in any area except the scalp can be readily apposed by undermining both sides of the wound. The extent to which a skin flap can be undermined varies in different parts of the body depending on the vascularity of the part. All such apposition should have no tension on the skin stiches and there should be no occasion to use tension sutures.

Stitching—The method of stitching determines the resultant scar formation to a large extent. There should be subcuticular interrupted catgut stitches to keep the skin margins apposed. In some places the necessity of skin sutures does not arise if the catgut stitches can be well placed and well spaced. The skin can be apposed by interrupted silk or nylon stitches or by continuous subcuticular nylon suture. In injuries of the face the problem of wound excision does not arise and the place of traumatic surgery comes topmost. The injured margins are straightened and made regular. Then a perfect apposition is made by interrupted catgut sutures. In case further sutures are needed to keep the skin margins apposed, a subcuticular or a few interrupted nylon sutures are put in.

If local apposition is not possible, then one of the following methods may be adopted :

(*a*) Skin grafting, immediate and delayed ; (*b*) Local skin flaps (with or without skin grafting of donor sites) ; and (*c*) Distal skin flaps.

Immediate skin grafting is most successful in parts like hands, scalp, genitals and face provided the wounds are not dirty and there is no raw bone or tendon exposed. For skin flaps a plastic surgeon's help is at times indispensable for designing the skin flaps. In injuries of the face, and in injuries where there is exposure of brain or bones or tendons, immediate cover is only possible with skin flaps. In some places, if the flaps are big, the donor sites may need skin grafting too.

Types of Skin Flaps :

V-Y extension flap—As the name signifies the flap is cut in the shape of 'V' and the limbs of the flap are stitched in the shape of Y. So the flap is pushed forward as long as the stem of the Y permits.

'Z'-Plasty—For scars across a joint, this is a very important procedure so as to change the direction of scar formation almost at right angles to the line of injury (Fig. 1).

Relaxation incisions with two doubled pedicle flap—The areas exposed by relaxation incision have to be covered by skin grafts.

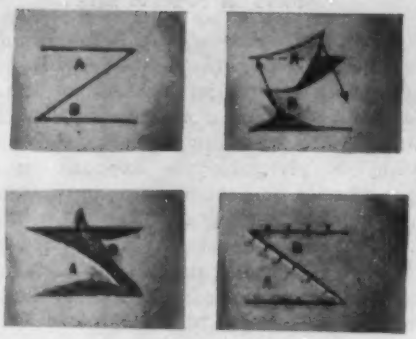

Fig. 1—'Z'-plasty to Change Direction of Scars

Rotation flaps—The area of skin loss is made up in the form of a triangle, when one limb is extended in a circular way as shown in the diagram (Fig. 2). The advancement is done by a

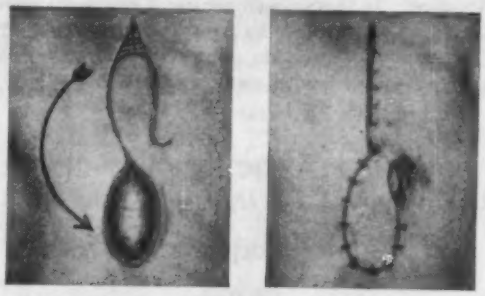

Fig. 2—Rotation Flap—One Type

side cut from the circular limb. Then the raw area can be covered by rotation of the flap.

Transposition flaps—A flap is transferred from one place to another on a pedicle and the raw surfaces produced are covered with skin grafts .

Distal flaps—When the wounds are too big, especially those of the extremities, with exposure of bones and tendons, skin flap may have to be taken from a distant area (Figs. 3, 4, 5 and 6). A

Fig. 3—Open Fracture Both Bones of the Forearm with Considerable Loss of Skin and Exposure of Bones

FIG. 4—ABDOMINAL BRIDGE FLAP WITH FIXATION OF THE FRACTURES BY HYNE'S APPARATUS

FIG. 5—RESULT ONE MONTH AFTER THE BRIDGE FLAP WAS DETACHED

FIG. 6—SAME AFTER 3 MONTHS. THE BOY CAN MOVE THE FINGERS TO SOME EXTENT

raw area in the right leg may be covered by cross-legged flap from the left one. A degloved hand may have to be placed inside an abdominal pocket of skin. Injuries of fingers are repaired by a flap of skin from the palm with a pedicle.

Avulsion injuries—When a big portion of skin is avulsed, a large part of the same dies, if it is replaced as such. So to increase the chances of the take, a flap has to be prepared like a full-thickness graft by excising the subcutaneous tissues.

Pinch grafts—This simple procedure can be done by local anaesthetic. It is of immense value in some places, e.g., when the wound is not very clean or it is in a place like the sole of the foot, toe or finger. Pinch grafts help to cover the raw surface with great success. It gives a whole-thickness skin too.

BURNS

The skin grafts done for raw surface after burns should be thin. These may be cut in the shape of postage stamps or the sheets of skin may be perforated before placing them on the raw surface.

It is difficult to tackle the problem of major burns with 20 to 30 per cent raw areas needing skin grafts. The patients are too ill and anaemic. The first and foremost step is to cover the raw surfaces, but the patient is not well enough to donate that amount of skin from his own body. In such cirmumstances the only life saving measure is homografting, i.e., utilising skin from other persons to cover the raw surface of the burnt patient. In securing such skin the question of blood groups or racial or religious difference does not arise. If some autografts can be obtained, then the homografts and autografts are placed alternately. As soon as the raw surfaces are covered, the patient starts improving. In 3 weeks to a month, the homografts disappear. By this time autografts may spread and cover the raw surfaces caused by disappearance of the homografts. But even if some raw surfaces are left behind, the patient will be fit to give some more autografts to cover the remnant raw surface in one or more sittings.

SPECIAL ARTICLE

ELECTROLYTES AND CONGESTIVE CARDIAC FAILURE

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Increasing attention has been focussed on the role of electrolytes in congestive cardiac failure both in its genesis and treatment. Intensive studies in the causation of the cardiac oedema have failed to produce unanimous opinion regarding the metabolism of the sodium ions leading to their retention in the body with resultant hydraemia. On the other hand, the clinicians are realising more and more that the electrolytic disturbance claims a substantial portion of their so-called resistant cases of congestive cardiac failure. The appreciation of the

effect of electrolytic disturbance in the cardiac management has become highly pressing.

The accumulation of the sodium ions in the body may be either due to its diminished excretion through the glomeruli or increased absorption through the renal tubules or to both. In congestive cardiac failure with diminished cardiac output, there is proportionately greater diminution of blood flow through the glomeruli associated with diminished glomerular filtrate volumes. Merrill showed that with a fall of cardiac output to half, the renal blood flow is reduced to one fifth. In congestive cardiac failure with marked oedema, the renal flow may be about 20-30 per cent of normal, and glomerular filtrate volume 30-50 per cent of normal. This reduced flow will result in diminished excretion of sodium ions from the blood even though the reduction of glomerular filtrate volume does not approximate the obligatory volume for the excretion of the normal amount of the sodium ions. But the diminished filtration alone does not explain sodium retention ; for this does not happen in other types of diminished filtration.

The mechanism of the renal ischaemia is not definitely known. Excessive production of renin or of a large amount of vaso-excitor substance has been adduced as the possible cause by different workers.

The volume of glomerular filtrate per day is 180 litres containing 1200 g. of sodium chloride while the volume of urine is 1·5 litres a day with 1·5 g. of sodium chloride. This shows that 99·9 per cent of sodium chloride is absorbed. Any more increased percentage of absorption, if possible, is very small but since the retention of sodium may be increased to the extent of 1 g. a day, tubular absorption component alone without the contribution from the glomerules cannot explain the extreme sodium retention in cardiac oedema.

Diminished filtration rate may facilitate increased absorption of sodium. It is held that if the filtration rate falls to 70-80 c.c. per minute, sodium is completely absorbed by the tubules. Increased venous pressure is claimed to be the cause of increased absorption by some workers but denied by others. Tubular abnormality secondary to vascular disturbance may help increased absorption. Increased excretion of corticoids and DOCA-like substances have been demonstrated in the urine and sodium excretion in the sweat is found to be diminished. This has led to the theory that some stimulus acting through the adrenal cortex helps in the sodium retention by increased production of DOCA-like substances.

Retention of sodium in the body results in the retention of water: 0·9 g. of sodium chloride retaining 100 c.c. of water. Some workers claim to have identified antidiuretic substances in the urine of oedematous cardiac patients though not confirmed by others.

Though the exact metabolism of potassium is not yet known, it has been shown that there is potassium depletion in the cardiac failure which is roughly proportional to the extent of cardiac damage.

Depletion of excess fluid and salt in a hydraemic patient is an important item in the management of cardiac failure. Restriction of salt-intake and administration of mercurial diuretic play a substantial part in the therapeutic measures. Mild cases of congestive cardiac failure can be successfully treated with the salt restriction and mercurial diuretic alone. In some cases, receiving low salt diet and mercurial diuretic in addition to digitalis, rest and other recognised therapeutic measures, mercurial diuretic is found to have no or slight effect upon diuresis after a few injections. Some of these resistant cases are due to electrolytic disturbances in the body and they can be grouped into the following categories :

1. Hypochloraemic alkalosis.
2. Hypokalaemic alkalosis.
3. Low salt syndrome with hypovolaemia.
4. Low salt syndrome with hypervolaemia.

Hypochloraemic Alkalosis

Though the frequent administration of mercurial diuretics without concomitant administration of ammonium chloride may lead to hypochloraemic alkalosis resulting in mercury-fastness, this syndrome may also occur only after one or two injections of the diuretic, due probably to hypersensitiveness. Mercury-fastness develops when the plasma chloride concentration is 86 m. Eq./L. or less. If, of course, the kidney is not functioning, acidosis instead of alkalosis, develops and treatment is directed towards the correction of acidotic condition.

The symptomatology consists of lassitude, weakness, loss of appetite and later on mental derangement. Renal failure ultimately develops with retention of nitrogenous waste-products.

Management consists in the administration of 5-10 g. of ammonium chloride thrice daily for a few days. Prevention is easy with administration of ammonium chloride prior to mercurial therapy. Some workers advise continupus administration of small doses of ammonium chloride.

Hypokalaemic Alkalosis

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functions of the digitalis therapy is to restore the normality of potassium. But when digitalis is pushed to the toxic stage, potassium depletion occurs again. Many workers have used potassium successfully in stopping the cardiac arrhythmias due to digitalis intoxication. Plea has been made for a routine administration of potassium chloride to reinforce the effect of digitalis in congestive cardiac failure and to prevent digitalis poisoning, provided, of course, the kidney function is not severely jeopardised.

Hypokalaemia results not only in digitalis poisoning but also in frequent administration of mercurial diuretics in some cases and mercury-fastness results when the potassium depletion progresses to a certain level. It has been suggested that "there is a competition between hydrogen and potassium in renal tubular cells for the same transport mechanism" and when there is "a lowered concentration of potassium in renal tubules" in these hypokalaemic cases: more hydrogen ion is excreted due to the relative lack of potassium ion and hence alkalosis is the result.

The symptomatology consists of extreme weakness and lassitude, simulating familial periodic paralysis, with associated depression of RS-T segment and T wave and prolongation of QT interval in E.C.G.

Hypokalaemia may be associated with hypocalcaemia and correction of the hypokalaemic state may result in the clinical manifestation of neuromuscular irritability. Hence correction of hypokalaemia with potassium clhoride 1 to 2 g. t.d.s. should be associated with calcium therapy whenever tetany is apprehended.

Hypovolaemic Low Salt Syndrome

This syndrome occurs generally in patients with restricted salt-intake, and repeated administration of mercurials. The clinical picture resembles that of Addison's disease. The patient is weak, apathetic with anorexia, nausea and then may be vomiting and muscular cramps. The tongue is dry and skin inelastic. Blood pressure falls. Blood examination reveals haemoconcentration with high percentage of protein. Sodium and chloride concentrations in the serum are normal or slightly low. Nitrogenous waste-products may be retained in advanced cases. Mercury-fastness, of course, is present.

Hypervolaemic Low Salt Syndrome

Here the patient is oedematous with accumulation of hypotonic fluid in the extracellular tissue. The patient, in addition to being asthenic, apathetic, anorexic, is oedematous. His blood volume increases, the serum contents of sodium and chloride are low.

The mechanism of water retention is not definitely known. It is suggested that "there is a 'new-setting' of the osmoreceptors regulating the antidiuretic hormone production. Such a 'New-setting' could presumably result in the production of this hormone even at low extracellular fluid osmotic pressure level".

Diminished renal circulation results in the failure to excrete potassium from protein catabolism and the body being in a state of hyponitraemia, falls an easy victim to potassium intoxication in these low salt syndromes.

Management in both these types of low salt syndrome consists in slow intravenous administration of 250-500 c.c. of 3-5 per cent sodium chloride solution, keeping an eye on the lung condition. Diuresis occurs and the patient feels better, but sometimes though the patient gets a subjective feeling of well-being, his urinary output does not increase and the hydraemic condition remains unrelieved. In these cases, it is better to inject mercurial diuretic 1½ hours before the hypertonic saline therapy when diuresis often results.

No simple biochemical method is available to determine these different electrolytic depletions in the body which can be routinely employed in a hospital which is not equipped with modern instruments and staffed with expert personnel. The Fantus Test (modified by Bryant) for the estimation of chlorides in the urine has been suggested for routine employment in cardiac therapy to make the physician alert to the electrolyte depletion syndromes.

Fantus Test.—The reagents for the test required are 10 per cent potassium chromate solution and 0·73 per cent silver nitrate solution. 10 c.c. of urine is taken in a test tube to which 1 drop of potassium chromate solution is added. A yellow-orange colour is produced. To this, silver nitrate solution is added drop by drop till the colour changes to permanent reddish brown—the number of drops required being counted. Each drop of silver nitrate solution corresponds to 150 mg. of chloride per litre of urine.

Normally, the urine should contain at least 3 g. of chloride per litre. If the urine is acidic (pH 5·5 to 6·5) it indicates lack of proportionate excretion of sodium and/or potassium. If the urine is alkaline (pH above 7·5) proportionately increased excretion of the base ions is indicated.

Though the test does not tell us about the proportion or sodium and potassium ions excreted, it does show whether hypochloraemic acidosis, alka-

losis or low salt syndrome exists and the physician is alerted whether his mercury-resistant cases of congestive cardiac failure belong to these electrolyte depletion syndromes or to those from various other causes.

Summary

1. The exact mechanism by which the sodium ions are retained in the body in cardiac oedema leading to hydraemia is not known. Different ideas have been recounted.

2. Repeated administration of mercurial diuretic with low salt intake may result in electrolyte depletion syndromes. Many resistant cases of cardiac failure belong to these groups.

3. Important clinical manifestations of these syndromes are given with their management.

CASE NOTES

AXIAL TORSION IN A PSEUDOMUCINOUS CYSTADENOMA OF THE LEFT OVARY

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Axial rotation of the pedicle (torsion), haemorrhage, infection and suppuration, rupture and malignant change are various complications to which ovarian tumours are prone.

The blood supply to an ovarian cyst passes through its pedicle. Therefore rotation of the tumour on its axis will twist the pedicle and seriously interfere with if not completely cut off its blood supply.

Torsion may be slow or sudden. A small mobile tumour, a long pedicle, and a lax abdominal wall are all factors which encourage torsion. The extent of rotation may vary from half a turn to anything like twelve turns (Dugald Baird, 1950). Although it may rotate in either direction it is usually clockwise.

When a woman with an ovarian tumour has an episode of acute or subacute abdominal pain and tenderness, perhaps with some vomiting and pyrexia, torsion must be suspected. Rarely the pain may be sudden and severe associated with a thready pulse and low blood pressure signifying shock.

Case Report

An elderly Hindu woman of 55 of average build, anaemic and emaciated, presented herself at the hospital on 8-11-54. She had borne seven children of whom all except two survived. She had her menopause 1 year ago. She had been aware of an abdominal swelling for 1 year but had experienced no real symptoms except vague pains and aches in the back and lower abdomen. Ten days prior to her reporting at the hospital she experienced a sharp attack of abdominal pain, vomited and had an attack of diarrhoea. There was nothing else relevant in her gynaecological or obstetric history. When seen she was not vomiting and was not in any great distress. Her temperature was normal. Abdominal examination showed a tumour arising from the pelvis and reaching up to the umbilicus. It was a cystic, well outlined spherical tumour, the size of a football, fairly mobile and anterior to the uterus and more to the right than to the left side. The tumour was tender but not painful which was suggestive of subacute torsion having taken place. There was no evidence of free fluid in the peritoneal cavity. The uterus was found to be retroverted, the cervix pointing forwards. These findings were confirmed by vaginal and rectal examination also.

A preoperative diagnosis of right ovarian cyst was made and torsion was suspected as having occurred. After adequate preoperative improvement of the patient's general condition over three weeks she was operated upon on 2-12-54.

Under heavy spinal anaesthesia the abdomen was opened by a right paramedian incision. On opening the peritoneal cavity a large ovarian cyst was seen. There were vascular adhesions but these were easily separated. The tumour was delivered out of the wound. The pedicle looked dusky and congested with blood. The tumour turned out to be a left sided one. It had undergone torsion. It looked like a pseudomucinous cystadenoma. The right ovary looked normal. A left salpingo-oophorectomy was done to begin with and the tumour was removed to give better exposure.

Ovarian cysts may look perfectly innocent as this did, but when they are encountered in the

menopausal period the possibility of malignancy should be seriously considered. Unless there are special reasons for not doing so, such as the patient's inability to withstand the added risks of a more extensive operation, it is wiser to perform a total hysterectomy and bilateral salpingo-oophorectomy and this is the accepted line of treatment.

The patient made an uneventful recovery but required a transfusion to tide her over in the immediate postoperative period. She was discharged on 17-12-1954.

Macroscopically the tumour looked dusky and its walls contained extravasated blood. On puncturing the cyst a thick brownish muddy looking fluid not unlike meconium stained amniotic fluid gushed out.

Subsequent pathological study confirmed the tumour to be a simple pseudomucinous ovarian cyst without any evidence of malignancy.

Discussion

Torsion of an ovarian cyst is a very common complication and in 12 per cent of cases operated on for ovarian tumour torsion is seen to have occurred (Shaw, 1954). In the majority of cases the tumours are the common cystadenomata. Fimbrial cysts are more likely to become twisted than the chocolate cysts (endometriomas) and malignant tumours which become fixed by adhesions.

Operative treatment should not be unduly delayed as infection or rupture with subsequent peritonitis may follow.

In women of menopausal age particularly when the tumour is suspicious (and experience shows all tumours of the ovary are to be viewed with suspicion until submitted to thorough microscopical scrutiny) a radical operation is the one of choice.

References

Baird, Dugald—Combined Text Book of Obstetrics and Gynaecology. 5th Edition. Livingstone. Edinburgh. 1950.

Browne, F. J.—Post-Graduate Obstetrics and Gynaecology. Butterworth, London. 1950.

Shaw, Wilfred—Text Book of Operative Gynaecology. Livingstone. Edinburgh. 1954.

FIBROMA OF THE FRENUM (RIGA'S DISEASE)

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Fibroma of the frenum under the tongue or Riga's disease is rarely mentioned in the text-books and seldom reported in the literature. It is a neoplasm which may extend to two cm. in diameter and appears at a site where the pertussis ulcer is encountered. It disappears spontaneously after a few years. It is exclusively found in infancy (Brennemann, 1950).

On account of the comparative rarity, a case of Riga's disease which was successfully treated with chloramphenicol is being reported.

Case Report

M, a male child, one year old, was brought to me for treatment on 24-6-1953 for a small pea-sized ulcer on the frenum under the tongue. The ulcer looked like an ordinary one without any central pitting or raised margin. It was elicited from the history of the parents that the mother of the child had an abortion prior to this child was born. On the assumption of syphilitic origin of the ulcer, the child was treated in that line by mercurial preparation by mouth and organic arsenical by injections, followed by procaine penicillin 200,000 units daily for 3 days. After two months of treatment in the above line there was no clinical improvement. Moreover mother's blood was found negative for Kahn test. At this stage expert opinion was sought for and it was diagnosed as a case of Riga's disease. The ulcer was button like with raised border and about 1 cm. in diameter. It was pedunculated. There was no bleeding and no pain on touch. A transverse groove ran across it.

Subsequently the child had a few injections of liver extract and colloidal calcium and vitamin A and D, without any effect on the ulcer. On 24-8-1953 the child was empirically put on chloramphenicol 50 mg. thrice daily and the ulcer began to diminish in size from the 4th day and disappeared completely on the 10th day of medication. For the last one year the child is being followed up and is quite alright.

Reference

Brennemann's Practice of Pediatrics by various authors, edited by Irvine McQuarrie. New York. 1950.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, MARCH 16, 1955

COOLEY'S ANAEMIA

For a long time after Cooley and Lee[1] first described this disease in Italian children in 1925, the prevailing idea was that Cooley's anaemia was confined to the Mediterranean race only. Subsequent studies in recent years, however, showed that the disease has a world-wide distribution and affects non-Mediterranean races as well. The disease has so far been reported in children of English[2], German[3], Spanish[4], Mexican[5], American Negro[6], Egyptian[7], Chinese[8], and Thai[9] extraction. In India also 15 cases were reported until 1954 when Das Gupta, Chatterjee and Roy[10] reported another 42 cases. In the present issue of this journal is published a report of additional 11 cases by Ganguli and Lahiri.[11] The increasing number of reports from India indicate that it may not be so rare here and many similar cases were no doubt missed in the past.

The disease represents an hereditary defect in the production of haemoglobin. Classical Cooley's anaemia (or thalassaemia major) possibly represents the homozygous pattern of a specific gene, heterozygosity of which is manifested by the milder form of the disease labelled as Cooley's trait or thalassaemia minor.[12] Whether the widespread incidence of this disease is due to scattering of the affected gene from persons of the Mediterranean race to different parts of the world or is due to independent origin of the disease in different areas is a problem in genetics.

The typical form of the disease is usually severe in nature, occurring in the first 2-3 years of life and these patients die in their childhood. Characteristic monogoloid facies and osseous changes, red cell morphology, reticulocytosis, leucoerythroblastosis, hyperbilirubinaemia, decreased osmotic fragility of red cells, normal or high serum iron with greatly reduced iron binding capacity of serum and high level of circulating foetal haemoglobin, usually provide a diagnostic pattern which cannot be missed. Similar features of varying degrees in the parents, siblings or other collateral members in the family would firmly establish the diagnosis. However it may be mentioned here that in the light of recent observations, too much emphasis should not be laid on mongoloid facies which is only present in the severest form of the disease. Moreover this mongoloid feature is not an uncommon normal finding amongst Indians.[10]

The other extreme form with minimum anomaly, which some workers prefer to label as Cooley's trait or thalassaemia minor, is usually represented by asymptomatic adults who can be diagnosed only by careful haematological investigation. There may be marked aniso- and poikilocytosis, leptocytosis, target cells, polychromasia, and slight reticulocytosis. In some cases there may be 'hypochromic erythrocytosis' with low haemoglobin content. Serum iron and iron binding capacity of serum may be abnormal but foetal haemoglobin is not present to any significant extent. Cases of this nature may elude the unwary.

In between these two extreme forms of the disease, there is a wide spectrum of gradations of the disease with proportionate clinical features, haemotological, biochemical and skeletal changes.

Presence of large proportion of foetal haemoglobin in the red cells, demonstrable by the alkali resistance test of Singer *et al*[13] is a characteristic feature in the active form of the disease. Only other conditions where an appreciable quantity of foetal haemoglobin has been found are cases of sickle cell anaemia and some cases of hereditary spherocytosis both of which are fortunately extremely rare in India. Foetal haemoglobin has greater affinity for oxygen than the adult haemoglobin and it thereby facilitates gaseous exchange. Hence teleologically the presumption is that anaemia dating from birth leads to the development and persistence of foetal haemoglobin as a compensatory mechanism of Nature. Osseous

[1] COOLEY, T. B. AND LEE, P.—*Tr. Am. Pediat. Soc.*, **37** : 29, 1925.
[2] BYWATERS, E. G. L.—*Arch. Dis. Child.*, **13** : 173, 1938.
[3] FRENDENBERGH, E. AND ESSER, M.— *Ann. Paediat.*, **158** : 128, 1942.
[4] JASO, E., ALES REINLEIN, J. M. AND PANDO URDAPILLETA *Rev. clin. espan.*, **4** : 425, 1942.
[5] SILVER, H. K.—*Am. J. Dis. Child.*, **80** : 767, 1950.
[6] SCHWARTZ, S. O. AND MASON, J.—*Blood*, **4** : 706, 1949.
[7] DIWANI, M.—*Arch. Dis. Child.*, **19** : 163, 1944.
[8] DEMARSH, Q. B.—*Blood*, **5** : 798, 1950.
[9] MINNICK, V., *et al*—*Blood*, **9** : 1, 1954.
[10] DAS GUPTA, C. R., CHATTERJEE, J. B. AND RAY, R. N.— *Bull. Calcutta School of Trop. Med.*, **2** : No. 2, 35, 1954.
[11] GANGULI, H. AND LAHIRI, S.—*J. Indian M. A.*, **24** : 453, 1955.
[12] VALENTINE, W. N. AND NEEL, J. V.—*Arch. Int. Med.*, **74** : 185, 1955.
[13] SINGER, K., CHERNOFF, A. I. AND SINGER, L.—*Blood*, **6** : 413, 1951.

changes typified by the radiological appearance of hair-on-end with thinning of inner and outer table is due to hyperplasia of bone marrow which expands at the expense of the cortex. These changes though of immense diagnostic significance are not absolutely infallible because similar occurrences are not uncommon in hereditary spherocytosis or sickle cell anaemia.

The hereditary defect being irreversible, the disease is usually progressive and incurable. The available therapeutic measures for management of the conditions are far from satisfactory. Repeated blood transfusions as and when necessary will prolong useful life in the vast majority of unfortunate victims. Cobalt chloride[14] may temporarily improve the blood picture. The scope of splenectomy is very limited; splenectomy being useful only in a few instances where hypersplenism with or without recurrent haemolytic episodes complicate the situation.[11, 15, 16]

THE METRIC SYSTEM

The suggestion of a comprehensive decimal system of weights and measures came as early as the last quarter of the 17th century. But the emergence of the metric system came little over a century later. In 1791 the Paris Academy of Sciences embodied the essentials of the system in a report to the French National Assembly. The system was introduced the same year. In spite of its simplicity it took many years to be adopted as the obligatory system in its country of origin. The hope that it would be adopted by other countries and become the international and universal system has been realised only partly. Scientific measurements however are now almost exclusively done in the metric system. The establishment in 1875 of the International Bureau of Weights and Measures at Sèvres near Paris greatly facilitated this, assuring at the same time "the international unification and improvement" of the system. The Bureau constructed new standards, which differ slightly but significantly from the original ones aimed at.

The British Commonwealth and the United States including their dependencies are conspicuous areas where the metric system has not come to its own. While scientists use it for their scientific work as they do everywhere, large bodies of medical men throughout these areas cling tenaciously to their own systems, clumsy no doubt yet made quite practical by constant use. They remain ingrained in grains and scruples do not cloud their consciences.

It should be remembered that though British and American doctors use the same words, they do not necessarily mean the same things. For instances the Imperial fluid ounce equals 0·9608 U.S. fluid ounce; an American pint contains 16 U.S. fluid ounces, whereas its Imperial counterpart has 20 fluid ounces. An Imperial gallon is thus greater than the American gallon by a fifth. Even the American yard is 3 parts in a million larger than the Imperial yard. All this is confusing. We still having a hangover from our immediate British connection are carrying on this unnecessary Imperial burden. It is time we make a clean break and adopt the metric system.

In the circumstances it is gratifying to note that the Working Committee of the Indian Medical Association at its last meeting at Lucknow in December approved the suggestion of the Drug Controller regarding the adoption of the metric system for medical and pharmaceutical purposes. The Working Committee has suggested a comprehensive six-fold programme in its resolution on the subject, viz., "1. Training of pharmacists and medical students on metric system. 2. Revision of relevant text books with this idea in view, so far as possible. (3) Revision of Indian Pharmacopoeia and different hospital pharmacopoeias by simultaneous introduction of the equivalents to start with. 4. Special publication on metric system of weights and measures with corresponding weights and measures of Imperial system and its free distribution through appropriate agencies. 5. Manufactures of actual weights and measuring equipment on metric system and adequate publicity to the same. 6. Instruction to manufacturers of drugs and medicines to mention doses of their products in metric system along with those of existing Imperial system."

There will of course be difficulties till the change-over from the Imperial to the metric system is completed. And until such time both systems will have to be used simultaneously. The difficulty will not be so much in teaching the system to a new generation of students as it will be with the older generation of medical men, for they will not only have to unlearn things but will have to change a life-long habit as well.

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[14] WIESSBECKER, L.—*Proc. 3rd Internat. Cong. Inst. Soc. Haemat.*, Cambridge, p. 68, 1950.
[15] GOVAN, C. D.—*J. Pediat.*, **29**: 504, 1946.
[16] LICHTMAN, H. C. *et al*—*J. Clin. Invest.*, **32**: 1229, 1943.

CURRENT MEDICAL LITERATURE

Cardiac and Non-Cardiac Chest Pain

MASTER AND OTHERS (*Ann. Int. Med.*, **41** : 315, 1954) in summarising their observations write :

The diagnosis of chest pain has always been an important medical problem. With the increasing life span and the resultant increase in the incidence of coronary heart disease, anginal pain has become even more common than heretofore. Moreover, pain in the chest is frequently noncardiac in origin. This type of pain is chiefly the result of a neurogenic disturbance, but it may be due to other conditions such as spondylitis, arthritis, neuritis, fibrositis or myositis, hiatus hernia, gall-bladder disease, peptic ulcer and chronic lung disease.

Chest pain has usually been considered cardiac in origin if (1) it was induced by effort, (2) its location was substernal, (3) it was constricting or oppressive in type, (4) it radiated into the left shoulder or arm, (5) it was of short duration, (6) it was relieved by nitroglycerin.

Non-cardiac chest pain, on the other hand, was assumed to have the following characteristics : (1) it occurred at rest, (2) its location was in the left chest, (3) it was aching in quality, (4) it did not radiate, (5) it was of long duration, and (6) it was not relieved by nitroglycerin.

Although the majority of cases can be differentiated on the basis of these criteria, a large number of exceptions occurs. Since many physicians often rely on any one of the criteria for diagnosis, it appeared advisable to make a statistical study to determine the diagnostic value of each criterion.

The authors investigated 100 patients with coronary disease and angina pectoris, all with abnormal electrocardiograms, and 100 patients with non-cardiac pain and found that the exceptions to the pathognomicity of the six criteria ranged from 15 to 40 per cent. For example, in one-fourth of the non-cardiac cases the pain was substernal, and in one-third it was associated with effort. It was relieved by nitroglycerin in more than 10 of the 27 of these patients who employed this drug repeatedly. On the other hand, in a third of the patients pain of cardiac origin was located in the precordial area or in the left chest, rather than in the substernal region. It occurred at rest as well as on effort in 31 per cent, and was not relieved by nitroglycerin in 10 to 15 per cent.

None of the six characteristics hitherto accepted should be used alone to differentiate between cardiac and non-cardiac chest pain. However, when three or more of the characteristics of either cardiac or non-cardiac pain are present, a definite diagnosis can usually be made.

The Superior Vena Cava Syndrome

SCHECHTER (*Am. J. M. Sc.*, **227** : 48, 1954) writes that the interference of the flow of blood through the superior vena cava to the right heart produces a group of symptoms and signs which comprise the superior vena cava syndrome. They are : (1) a significantly elevated venous pressure in the upper half of the body in the presence of normal venous pressure in the lower half; (2) oedema and cyanosis of the face, neck and upper extremities (cyanosis is of a peculiar ruddy type and aggravated by assuming the horizontal position and many patients complain of a feeling of fullness or congestion in the head produced on reclining or stooping and relieved upon assuming the upright position); (3) development of collateral circulation which usually includes the observation of visibly dilated superficial veins over the upper half of the body, particularly the chest.

By the use of phlebography the precise location of the obstruction and information regarding the nature of the lesion can be obtained.

The author gives in a tabular form the analysis of his observations on 22 cases of superior caval syndrome. The principal cause has been the invasion of the vena cava by malignant tumors, aneurism of the aorta being the less occurring cause. The author notes an 11 per cent incidence of involvement of the superior vena cava in primary carcinoma of the lung and maintains that the syndrome is not so rare as was thought before.

Hyperglycaemia without Glycosuria

MCCULLAGH AND LANE (*J.A.M.A.*, **156** : 925, 1955) from ten to twenty-eight year study stress that in patients with hyperglycaemia without glycosuria, 4 out of 10 patients will later have overt diabetes or be considered as diabetes suspects, as compared to 2 out of 10 in an analogous control group of persons with normal blood sugar levels. If a patient is more than 50 years of age and has an abnormally elevated blood sugar level, yet has no glycosuria, the probability of his later showing signs of diabetes or becoming a diabetes suspect is about 56 per cent, as compared to 20 per cent in an analogous control group. In all age groups, the incidence of diabetes or suspected diabetes is increased in the presence of hyperglycaemia beyond that seen in a control group. Nearly one-half (47 per cent) of those patients in the hyperglycaemic group who were later classified as diabetic had signs of diabetes in the first five years after the initial examination. Most of the occurrences of diabetes in the control group were 10 to 20 years after the initial evaluation. In this study, 5 of 10 patients with hyperglycaemia without glycosuria who had a family history of diabetes mellitus subsequently had definite diabetes. Obese patients with hyperglycaemia subsequently became diabetic in a significantly greater percentage (41 per cent) than did obese patients in the control group (13 per cent). As was to be expected, those patients in whom elevated blood sugar levels were found a longer time after eating were more likely later to have diabetes than those in whom hyperglycaemia was maintained for a shorter time.

The routine blood sugar test is valuable in detecting diabetes. It is recommended that any patient who consistently has hyperglycaemia, even though mild and without glycosuria should be treated as a mild diabetic and possible aggravating factors corrected in an attempt to decrease the chance of a severer diabetic state developing. Such management is much more important if one or more of the following conditions are present in addition to the hyperglycaemia : (1) a family history of

diabetes mellitus, (2) obesity, or (3) an age of more than 50 years.

Amyloidosis Complicating Rheumatoid Arthritis

REECE AND REYNOLDS (*Am. J. Med. Sc.*, **228** : 554, 1954) give in the following lines the summary of their observations on 5 patients suffering from rheumatoid arthritis complicated with amyloidosis.

One patient is still living 4 years after the diagnosis of amyloidosis was made. There is some evidence of regression of the amyloidosis in this case. Whether this is spontaneous, or due to crude liver or cortisone therapy cannot be determined.

To date, a total of 97 cases of amyloidosis associated with rheumatoid arthritis have been reported.

The association of amyloidosis and rheumatoid arthritis is probably more common than generally recognized.

No specific form of treatment has yet been found to be universally successful in treating amyloidosis.

The diagnosis of amyloidosis depends primarily upon a high index of suspicion when seeing a patient with chronic rheumatoid arthritis who also has hepatosplenomegaly, oedema and albuminuria. Congo red absorption of marked degree confirms the diagnosis, although at necropsy some cases have been reported in which the Congo red absorption was minimal.

Hereditary Susceptibility in Rheumatic Fever

WILSON AND SCHWEITZER (*Circulation*, **10** : 703, 1954) in giving the pattern of hereditary susceptibility in rheumatic fever observe :

The families of 291 selected parents including 646 children were under continuous medical supervision for an average period of 10 years.

The parents selected included 224 members of the Pediatric Cardiac Follow-Up Clinic of the New York Hospital, 24 consecutive patients with rheumatic heart disease admitted to the Lying-in-Hospital, and 43 brothers or sisters of rheumatic members of the Cardiac Clinic.

Forty of 121 children from genetically susceptible families developed rheumatic fever compared with 3 of 525 children from nonsusceptible families.

Genetic analysis of the various mating types gave good agreement with simple recessive inheritance while excluding other mechanisms. Corroboration of the previous conclusion that rheumatic fever susceptibility is inherited as a simple recessive trait was obtained.

Clinical Evaluation of 6-Mercaptopurine

BURCHENAL AND OTHERS (*Am. J. Med. Sc.*, **228** : 371, 1954) write :

The therapeutic activity of this compound has been evaluated by the Chemotherapy Service, Memorial Center, in 269 patients with neoplastic disease, of whom 140 had acute leukaemia, 8 subacute, 18 chronic myelocytic, and 4 chronic lymphocytic leukaemia. The usual dose in children was 2·5 mg./kg. by mouth in a single daily dose and at this level very few toxic manifestations were observed.

At 2·5 mg./kg. daily the antileukaemic effect of mercaptopurine generally did not become manifest until after 3 to 8 weeks of continuous therapy although occasionally it acted more rapidly.

Mercaptopurine had no practical value in chronic lymphocytic leukaemia, lymphosarcoma, Hodgkin's disease or any of the metastatic carcinomas so far studied. In patients with metastatic reticulum cell sarcoma slight temporary regressions of tumor masses and subjective improvement were occasionally noted.

As shown by cross resistance studies, it acts through mechanisms differing from those of the steroids or the folic acid antagonists. A high percentage of temporary remissions can be achieved with this drug in children with acute leukaemia. Occasional remissions also occur in adults but the results are generally not as satisfactory as with the children. In early chronic myelocytic leukaemia, excellent remissions can be achieved, but here as in the acute leukaemias, maintenance therapy must generally be continued. Occasional beneficial effects have been seen in the terminal acute stage of chronic myelocytic leukaemia, but these remissions have been of short duration. Mercaptopurine thus adds another type of antileukaemic agent to the armamentarium of the clinician.

Oxytetracycline in Isoniazid Resistance

STEWART AND OTHERS (*Brit. M. J.*, **2** : 1508, 1954) in a report to the Research Committee of the Tuberculosis Society of Scotland give below a summary of their observations on the use of oxytetracycline in preventing or delaying isoniazid resistance in pulmonary tuberculosis :

Thirty-three cases of pulmonary tuberculosis were treated with oxytetracycline and isoniazid. Oxytetracycline was given in a dose of 1 g. daily (T1H) to 10 patients, 2 g. daily (T2H) to 13 patients, and 5 g. daily (T5H) to 10 patients. A group of 17 patients with similar disease, who had been treated with isoniazid alone (H group), was used for the purposes of comparison.

Sputum conversion occurred by the end of the third month of treatment in 5 of the 10 patients in the T1H group, in 6 of the 13 in the T2H group, and in 5 of the 10 patients in the T5H group. Six of the 17 patients in the H group had become sputum-negative over the same period.

Isoniazid-resistant organisms were isolated at some time from about one-half the patients in the T1H and the T2H groups and from about two-thirds in the H group; but in the T5H group resistant organisms were obtained from only 3 out of the 10 patients, and in none before the end of the fifth month of treatment.

No oxytetracycline resistance was encountered.

There was no important difference between the four treatment groups as regards clinical or radiological progress over the first three months of treatment.

Treatment of one patient in the T5H group had to be stopped after one week because of intractable diarrhoea and vomiting. Apart from this, the toxic effects attributable to oxytetracycline were slight.

Owing to the considerable incidence of isoniazid resistance in the T1H and T2H groups, neither method can be recommended as satisfactory in treatment. On the

other hand, oxytetracycline in a dosage of 5 g. daily would seem to be of probable value in delaying or preventing the onset of isoniazid resistance, but this combination is likely to be less effective than that of streptomycin or P.A.S. with isoniazid; it is also very expensive.

Treatment of Leukaemia

BURCHENAL (*Bull. N. Y. Acad. Med.*, **30** : 429, 1954) gives below the scheme of treatment to be followed in leukaemia.

The therapeutic agents at present available for treatment of leukaemia are irradiation and chemotherapy.

In acute leukaemia the sequential use of the antimetabolites, amethopterin, aminopterin, and 6-mercaptopurine, and the hormones, ACTH and cortisone, may be expected to produce beneficial effects with an increase in survival time in a high percentage of children. Definite but less frequent beneficial effects have been noted in adults with mercaptopurine.

Irradiation either by local or total body x-ray or p^{32} therapy offers perhaps a wider range of applicability and technique than any of the chemotherapeutic agents in the treatment of the chronic forms of leukaemia.

In chronic myelocytic leukaemia, myleran, TEM, urethane, arsenic and HN_2 in order of preference are useful chemotherapeutic agents. 6-mercaptopurine is still under evaluation in this form of the disease but may prove to be of considerable value.

In chronic lymphocytic leukaemia, the only chemical agents of value are the mustard derivatives, TEM, HN_2, and the hormones and possibly urethane.

Definite progress in the chemotherapy of leukaemia has been made in the last ten years and it would appear that this discipline offers the greatest promise for the future control of the disease.

In leukaemia, even more than in most other medical diseases, specific therapy is only one aspect of the management of the situation. Transfusions should be given as often as necessary to combat anaemia, and antibiotics in massive doses should be employed whenever serious infection threatens the patient. The maintenance of morale is also an important factor and for this reason it is suggested that the patients be allowed to live as normal a life as possible within the limits set by their physical condition. Thus for instance, most patients with chronic myelocytic leukaemia can continue to work up to within a month or two of the time of death.

Chemotherapy in Leukaemia and Hodgkin's Disease

WINTROBE AND OTHERS (*Ann. Int. Med.*, **41** : 447, 1954) in a table given below summarizes their experience on the effect of chemotherapy in leukaemia, Hodgkin's disease and related disorders.

The discussion has been concerned chiefly with chemotherapy. It is not intended to imply, however, that radiation therapy is now outmoded. As indicated in the table, radiation therapy is as valuable as any of the chemotherapeutic agents in the treatment of all the conditions listed except acute leukaemia. In some conditions radiation therapy may be more effective than any of the chemical compounds which have been discovered so far. Thus, it has yet to be shown that the remissions induced by Myleran are comparable in duration to those which follow skilful radiation therapy. Again, radiation locally applied when no systemic therapy seems to be required has no counterpart in chemotherapy. Against these advantages must be weighed the convenience and smaller cost of chemotherapy and the discomforts of radiation sickness as compared with those of the drug which may be used. In the last analysis the most effective management of the disorders under consideration

SUMMARY OF CHEMOTHERAPY OF LEUKAEMIA AND RELATED DISORDERS

Disease	X-ray P32	Mustard Congeners		Myleran	Urethane	Folic acid antagonists	Cortisone	
		HN_2	TEM				ACTH	6 MP
Hodgkin's ...	++++	++++	+++	O	O	C	±	C
Chronic lymphocytic leukaemia ...	+++	++	+++	O	O	C	±	C
Lymphosarcoma ...	+++	++	++	O	O	C	±	C
Reticulum cell sarcoma	++	++	+	O	O	C	O	C
Chronic myelocytic leukaemia ...	+++	+	+	++++	++	C	C	+
Acute leukaemia—								
Lymphoblastic ...	C	C	C	O	O	++++	++++	++
Myeloblastic ...	C	C	C	O	O	+++	C	++
Monocytic ...	C	C	C	O	O	+	C	+

++++ Effective and preferable. +++ Effective. ++ Moderately effective. + Slightly effective.
± Sometimes effective. O Ineffective. C Contraindicated.

is to be found in the judicious use of the whole therapeutic armamentarium that is available.

Therapeutic Uses of Enzymes

CLIFTON (*Am. J. Med. Sc.*, **228** : 568, 1954) in dealing with the present status of therapeutic use of enzymes writes :

It is fair to say that when used in conjunction with good medical and surgical principles, including the use of antibiotics, enzymes are a very useful addition to our armamentarium.

Streptokinase-Streptodornase is most useful in haemothorax, haematomas, in thick empyema and in abscesses, wounds or ulcers containing plasminogen.

Trypsin will be most useful in debriding early chronic abscesses, ulcers and wounds and for clearing the respiratory tract of thick secretions. Its use in thrombophlebitis and related conditions is still controversial.

Hyaluronidase will increase the speed of absorption of clyses and drugs, the resorption of excess fluids and blood in the tissues, and the effectiveness of local anaesthesia.

There are many other suggested uses of these enzymes which may be proven to be satisfactory, and new enzymes now in process of development may be found very useful especially in treatment of burns (collagenases) and vascular thromboses (plasmin).

Gastrointestinal Complications of Antibiotic Therapy

MELLINKOFF (*Am. J. Gastroenterol.*, **22** : 295, 1954) deals with the subject under 5 (five) heads :

Allergic reactions—These may be dismissed by saying that it is not surprising that the common and uncommon antibiotics are capable of producing a variety of allergic manifestations, chiefly dermatological and sometimes haematological.

Toxic effects on mucous membranes—These lesions usually appear after a protracted treatment of high dosage with aureomycin, terramycin, chloromycetin or one of the other newer agents capable of ridding the bowel of its usual flora. There is no easy correlation, however, between the length of treatment and the appearance of the lesions, and there seems to be tremendous individual variability in the susceptibility of the patients to this complication. The lesions usually consist of erythematous areas, the shades varying from light pink to dark red, with or without raw areas, and sometimes whitish plaques. These may appear in the mouth, around the anus, and in the vagina, and they may be accompanied or preceded by burning, paraesthesias of various kinds, pain, or in the case of the anus, itching. On the tongue, in addition, the "black tongue" that has previously been observed with prolonged penicillin therapy may sometimes appear. These or similar lesions may sometimes appear in the oesophagus, and dysphagia of the type seen in the Plummer-Vinson syndrome may occur.

Usually the lesions disappear fairly promptly upon discontinuing all antibiotic therapy, but short of cessation of antibiotics no effective treatment other than symptomatic measures is known. Liver injections have been advocated, but have not proved to be beneficial.

Nausea—The most common and most frustrating complication of antibiotic therapy is the production of anorexia, nausea, or vomiting. About the only consistently helpful method of treatment is to give the drug only immediately following the ingestion of some food, or milk.

On rare occasions antibiotics may produce severe gastralgia, including nausea, vomiting retching and serious haematemesis.

Diarrhoea—Like nausea, the diarrhoea seems to be influenced greatly by the dosage by the length of administration and also by the variable susceptibility of different individuals to this toxic effect. The treatment, if it is impossible to stop the drug or reduce the dosage, is symptomatic. There is, however, much less often, a rather persistent form of diarrhoea which may follow prolonged antibiotic therapy which does not always subside when the drug is discontinued. This form of diarrhoea has been attributed to the fungi or antibiotic resistant staphylococci whose growth in the oropharynx, intestine and pulmonary tree are favoured by the administration of antibiotics for long periods. Other investigators, however, have suggested that the fungi are merely coincidental, or perhaps even encouraged by the diarrhoea itself and hold that diarrhoea of this type is a form of sprue or sprue-like state, possibly caused by some deficiency in nutritive requirements. This very interesting possibility the author maintains should be further investigated.

Effects upon the liver—A welter of seemingly contradictory evidence is found regarding the effects of common antibiotic drugs upon the liver and possibly the deleterious effects may be overshadowed by other effects of the antibiotics which may be beneficial to the liver. There seems to be no good evidence that antibiotics should not be used whether liver disease be present or not, if there is a definite indication for the antibiotic therapy.

Liver Function by Cholangiography

SAMUEL AND OTHERS (*Lancet*, **1** : 13, 1955) write that no laboratory test of liver function is by itself reliable, and the multiple testing which is now done routinely is laborious, expensive, and time-consuming. The authors have therefore investigated the possibilities of using cholangiography to estimate liver function.

30 cases on whom cholangiography was performed were subjected also to routine laboratory testing of liver function. The rate of excretion and the concentration of the dye, demonstrated radiographically, were correlated with the laboratory findings in an attempt to assess the value of cholangiography as a means of estimating liver function.

Of 19 cases judged radiographically to show good excretion of dye by the liver, 12 were shown by laboratory tests to have normal liver function and 7 to have slight impairment of liver function. It was concluded that slight impairment of liver function is not detectable radiographically.

Moderate degrees of liver damage present in 3 cases showed exact laboratory and radiographic correlation.

4 cases showing severe liver damage also revealed exact laboratory and radiographic correlation.

In cases with some degree of biliary obstruction the radiographic findings suggested a greater degree of hepatic insufficiency than was indicated by the laboratory data.

It was concluded that a broad estimate of liver function can be made from cholangiography alone.

Tobacco Bronchitis

GREENE AND BERKOWITZ (*Ann. Int. Med.*, **40**: 729, 1954) give in the following lines the summary of their observations :

Forty-three hundred and twenty-two preoperative patients have been clinically studied with the aid of a test-cough of proved sensitivity and reliability. Smoking habits were correlated with respiratory abnormalities before, during and after operation.

Smoking is twice as common in males as in females, but the daily consumption of 20 or more cigarettes is practised by approximately the same proportion of smokers, *viz.*, 79 per cent of male smokers, 63 per cent of female smokers. The prevalence of smoking among women is increasing toward equality with the male rate. The frequency and degree of smoking decrease after the age of 49, more rapidly in females.

"Inhaled" smoking is the cause of "smoker's bronchitis". It is rare in cigar and pipe smokers. On the other hand, 96 to 98 per cent of cigarette smokers inhale. Tobacco bronchitis is therefore almost entirely confined to cigarette smokers. The frequency of bronchitis is 9 per cent in children and non-smoking adolescents, and 7·4 to 19·3 per cent in non-smoking adults. The incidence rises progressively with the quantity and duration of smoking to an average of 76 to 80 per cent in smokers of both sexes who consume 20 or more cigarettes.

Smoking is four to seven times more common as a cause of bronchitis than all other causes combined. Tobacco bronchitis is therefore the most frequent factor in the aetiology and pathogenesis of complications that follow bronchitis of any origin, viz., laryngospasm, bronchospasm and bronchorrhoea during anaesthesia, bronchitis, atelectasis and pneumonia after operation. Cessation of smoking cures "smoker's bronchitis".

The results of this study explain several problems in the epidemiology of respiratory complications during and after anaesthesia and operation.

In conclusion the author maintains that the preanaesthetic test-cough is recommended for its diagnostic, prophylactic and prognostic values in relation to tobacco bronchitis in the general surgical population.

The frequency and importance of "smoker's bronchitis" justify deliberate preoperative consideration of smoking habits.

Prevention of Recurrences in Genital and Breast Cancer

LOESER (*Brit. M. J.*, **2**: 1380, 1954) observes that the incidence of female breast and genital cancer is far lower in allergic and hyperthyroid conditions (Group A) than in hypothyroid women or women after a partial thyroidectomy because of goitre (Group B).

Women belonging to Group A have on average a much higher histamine content in their cells than women in Group B, and the lipid content of the blood is much lower in Group A than in Group B.

The more thyroid hormone circulating in the blood the higher the histamine content in the cells, the lower the level of the lipids the less tendency to cancer formation.

The less thyroid hormone circulating in the blood the lower the histamine content in the cells, the higher the level of the lipids the more tendency to cancer formation.

Intracellular protein-bound histamine is regarded as a defence hormone against cancer formation under the control of the thyroid hormone.

Thyroid hormone, given in massive dosage in cases of inoperable cancer of the breast and genitals, slowed down cancer growth.

Thyroid hormone in daily doses ranging between 1 and 5 gr. (65 and 320 mg.) was given over six years as a prophylactic against cancer recurrence after radical operations because of breast or genital cancer, and after deep x-ray treatment. The good results which were obtained should encourage further trial of this method on a large scale.

Perforation in Benign Peptic Ulcer

FELDMAN (*Am. J. Med. Sc.*, **228**: 506, 1954) in dealing with the incidence of perforation in benign peptic ulcer observes :

The incidence of benign peptic ulcer of the greater curvature of the stomach is approximately 2 to 3 per cent of all such ulcers.

Benign peptic ulcers of the greater curvature occur predominantly in the body of the stomach (50 per cent).

The average size of the greater curvature ulcers is larger than that of those occurring on the lesser curvature. The average diameter of the ulcer in 29 cases was 2·6 cm.

Benign peptic ulcers of the greater curvature are not generally associated with peptic ulcers elsewhere in the gastroduodenal region. Of the 68 cases, there were 7 instances (10 per cent) with associated lesser curvature or duodenal ulcerations.

In 68 collected cases of benign peptic ulcer of the greater curvature, there were 12 instances of perforation, an incidence of 17·6 per cent.

Of the 12 perforated peptic ulcer cases, 11 perforated into the adjacent viscera. The gastrocolic omentum, transverse colon, and spleen were most commonly involved.

Premedication for Tonsillectomy

RENDELL (*Brit. M. J.*, **2**: 1397, 1954) writes that ideally, premedication for tonsillectomy would be pleasant to receive, easy to administer, would induce sleep without restlessness or loss of muscle tone, and might have further advantages, such as analgesic, amnesic, or anti-emetic properties. If would be non-toxic and would not depress respiration or the protective laryngeal or cough reflexes.

Methylpentynol (oblivon) and atropine were given for pre-anaesthetic medication to 182 children before tonsillectomy. It successfully diminished pre-operative apprehension in 130 cases and in 17 it was partially successful. Only in 5 was it a failure.

The drug was readily acceptable to patients, and toxic or unpleasant side-effects were not observed in this series.

Protective reflexes were not depressed and post-operative restlessness was but slight. The difficulties of nursing care were consequently reduced. Evidence on amnesia was incomplete, but the impression was gained that it did not occur to any marked extent.

"Failed Forceps": A Review of 100 Cases

GADD (*Brit. M. J.*, **1**: 735, 1954) from an analysis of 100 consecutive cases of failed forceps admitted to St. Mary's Hospital Manchester between Jan. 1943 and Dec. 1951 observes:

The incidence fell from 3·2 per cent of emergency cases in 1943 to 0·5 per cent in 1951. The causes of failure are divided into 8 groups; when more than one cause was present, the more important one was classified.

Group 1. Cervix not fully dilated (39 cases). After expectant treatment, full dilatation failed to occur in 6 of these and delivery was by caesarean section in 4, craniotomy in 1 and internal version followed by breach extraction in another. Of the rest, 6 were delivered spontaneously and 27 by forceps. Six babies were dead on admission and 8 more were subsequently lost. All mothers survived.

Group 2. Occipito-posterior position (22 cases). Failure of manual rotation and a funnel pelvis indicated section in 1 case and craniotomy was performed in the only case in this group where the infant was dead on admission. Of the others, 1 was delivered normally, 18 by forceps after rotation and 1 by forceps face to pubes. Four babies delivered by forceps succumbed to cerebral haemorrhage, 2 before and 2 after delivery. One maternal death was attributed to shock.

Group 3. Deep transverse arrest (11 cases). All were treated by manual rotation and forceps. Nine infants survived, 1 was dead on admission and the other stillbirth was caused by shoulder dystocia.

Group 4. Brim disproportion (7 cases). Three were successfully delivered abdominally. Two high forceps deliveries resulted in stillbirth and destructive operations were performed in the other 2 with a dead baby on admission. The average weight of the babies was 9 pounds 4 ounces, and this rather than pelvic contraction tended to cause the trouble.

Group 5. Outlet contraction (7 cases). In only 1 case was bony disproportion confirmed and a difficult forceps delivery resulted in stillbirth. Soft-tissue resistance appeared to have caused the failure with the others and all were successfully delivered by forceps after episiotomy.

Group 6. Hydrocephalus (3 cases). All were perforated after admission.

Group 7. Brow presentation (2 cases). One infant survived after caesarean section. The other was dead on admission and was delivered with great difficulty after craniotomy. Hysterectomy was necessary for extensive uterine rupture. Both mothers survived.

Group 8. Aetiology unknown (9 cases). Eight were easily delivered vaginally and all these babies survived. The remaining patient died on the second day with a ruptured uterus; her doctor had performed internal version and partial breech extraction after his forceps had failed. The head was delivered easily after admission. The rupture was not suspected until she was unfit for surgery.

In these 100 cases, 2 mothers and 28 babies were lost and there were 18 cases of notifiable pyrexia.

Prophylaxis involves every accoucheur remembering the standard criteria for successful forceps delivery. The abdomen should always be examined to exclude the hydrocephalic which has so moulded that the head is not fully engaged even though it is visible at the vulva.

If the cervix is palpable, it is wise to abandon immediate forceps delivery except in a multipara with a small and easily dilatable rim.

Principles of treatment include immediate shock therapy where indicated, abandoning vaginal delivery if moderate traction is ineffective, antibiotics, relief of dehydration, skilled anaesthesia and exploration of the uterus after delivery to exclude damage.

The fall in the number of cases of failed forceps is ascribed to improved antenatal care, better obstetric teaching and the appointment of new consultants in outlying areas. (Summary, *J. Obstet. & Gynaec. Brit. Emp.*, **61**: 541, 1954).

Blindness and Malnutrition in Eastern Cape Province

BLUMENTHAL (*S. A. Med. J.*, **28**: 967, 1954) gives below a summary of his observations on blindness and malnutrition in Cape Province:

Statistics and case histories strongly suggest that malnutritional keratitis occurs in the 2-5 year age-period (the post-weaning period) in Bantu infants.

Sections of 'clean' prolapsed irides suggest that the condition starts deep and not superficially, and is primarily a failure of mesodermal eye tissues.

It is suggested that the later manifestations of the conditions, e.g., secondary infections (and probably others such as trachoma), might stem in part from this early connective-tissue damage and damage to the corneal 'circulation', and that it can occur on a delicate chemical and physiological level without gross naked-eye evidence of the condition.

Flies, germs and dirt are only incidentals in 'damaged' and backward communities and not the cause of the damage.'

Trachoma is a relatively uncommon disease in the Bantu and is frequently misdiagnosed; and none of its features are specific, inclusion-bodies, on the evidence available, are not diagnostic.

A recent assertion that the vast majority of corneal scars in the Bantu are the direct result of primary bacterial infection and neglected corneal ulcers is vigorously contested.

Malnutritional keratitis is not the same condition as keratomalacia as has been suggested. A number of differences are cited in support.

CURRENT TOPIC

CHANGING STRATEGY IN MALARIA CONTROL†

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The impetus that malaria-control programmes have acquired throughout the world would have seemed incredible before the discovery of residual insecticides. F. J. Dy (1954) has summarized the documentation presented by most of the governments which sent delegates to the First Asian Malaria Conference in 1953, and it is impossible not to be struck by the size of the national programmes in the South-East Asia and Western Pacific Regions. A similar observation may be made as regards other parts of the world.

If, as was generally believed ten years ago when DDT was first applied in malaria control, the insecticide campaigns did have to be repeated year after year, and if—as was thought until two or three years ago—there was no evidence of anophelines developing resistance to chlorinated-hydrocarbon insecticides, the present scope of national programmes could only be a source of deep satisfaction to malariologists and public-health administrators.

Recent knowledge, however, makes one wonder whether the present strategy should not be revised.

Let it be emphasized that by house-spraying with insecticides we can well aim not merely at controlling malaria but even at eradicating it. Malaria eradication does not mean or require eradication of the anopheline species that carry the disease in a given area. It only means eradication of the malaria parasites. If transmission does not take place, the infections of the malarious patients, with or without treatment, would be cured. It is well known that malaria, when it does not kill, is spontaneously self-curing. Infection with *Plasmodium falciparum* generally lasts no longer than one year; with *P. vivax* generally no longer than two, or, exceptionally, three or four. The same is not true of infection with *P. malariae*, for we have learnt from experience with blood transfusions that this may indeed last throughout life. But we do not exactly know for how many years it remains infective for the mosquitos, whereas we know that it always infects them with more difficulty than is the case for *P. vivax* or *P. falciparum*, and that *P. malariae* is by far the rarest of malaria infections and in many places is not present at all. If infection with *P. malariae* is disregarded, it must then be admitted that, once the transmission of malaria in a country has been completely stopped for three or four years, there will be no more malaria parasites in the human or the mosquito host. If we then withhold malaria control, provided we effectively protect the country from reimportation of parasites, malaria will not return.

Discontinuation of Residual-Insecticide Spraying

It seems that this has become today one of the objectives in planning malaria-control programmes. We know, of course, that in some countries, this objective has already been attained.

When the first Expert Committee on Malaria of the Interim Commission of WHO considered, in 1947, the modern methods of malaria control, it said in its report that "DDT probably will have to be used as a recurring measure—as chlorine is used in water-supplies—and therefore expenditures may be expected to be maintained" (1948). In the third report of the WHO Expert Committee on Malaria (August 1949) the committee still recognized that: "An apparent drawback of the house-spraying programme is that once used it has to be continued. Nevertheless, the permanent use of domestic residual insecticides will not necessarily be confined to the prevention of malaria but may be directed also to the control of other noxious house-haunting arthropods, some of them vectors of disease" (1950).

In its fourth report (December 1950), however, the possibility that residual spraying might eventually be discontinued seemed to be implicit when the committee pointed out that, "so long as there is any focus of malaria in the area, or endemic malaria existing on its borders, it is not wise to terminate a residual-spraying project even though clinical malaria appears to have become rare" (1951).

It was only in the fifth report (September 1953) that the committee had on its agenda the question of the interruption of residual-insecticide spraying and, impressed by the plan of interruption in Greece, concluded that "the practice of discontinuing residual spraying, under proper safeguards, after several years of achieved malaria control, is both logical and feasible, and should be given careful consideration by administrations that have carried out malaria control to a satisfactory end-point in all or the major parts of their territory" (W.H.O. 1954).

The implications of this statement are of great importance for malarious countries. It recognizes that, under appropriate circumstances, residual-spraying schemes may eventually lead to the elimination of the recurring expenses of malaria control. It is true that malaria control by residual insecticides is economically feasible and therefore much cheaper than the methods one had to employ before the second World War, but national malaria-control programmes, protecting millions of people, do represent a heavy expense. It therefore seems obvious that, on the basis of such an authoritative statement as that issued by the WHO Expert Committee on Malaria, many health administrations of malaria-ridden countries would hope to discontinue malaria control in the near future or would be encouraged to adopt nation-wide malaria-control plans, believing that these plans would entail expenses limited to a small number of years.

However, it appears that there are not many countries today in which it would be advisable to discontinue residual-insecticide spraying, because the requisites indicated by the expert committee in its fourth and fifth

† Reproduced from the *Bulletin of the World Health Organisation*, **11**: 513, 1954.

reports are not met. First of all the discontinuation requires "several years of achieved malaria control", in other words, the certainty that transmission has not occurred for several years and therefore that malaria parasites in man or mosquito no longer exist in the given area. Further, the area where this end-point of transmission has been reached and maintained must be a major part of the territory, possibly so outlined as to have no endemic malaria on its borders or within them. Planning towards the objective of eradicating malaria and therefore of ending active malaria control will then have to take account of four desiderata.

First, within the area to be controlled, every locality where transmission is possible should be under control. It has been customary in many countries not to spray villages with very low spleen-rates or those that were too remote from the highways. This procedure would jeopardize the possibility of discontinuing the campaign, because it would leave sources of infection within the controlled area.

Secondly, the assessment of results should be so organized as to make it possible to ascertain if and where a total interruption of malaria transmission has been achieved. It is felt that the usual malariometric survey methods are not sufficiently sensitive for this purpose. As a matter of fact, it might be said that such methods lose much of their utility both where transmission is extremely intense and where it is at vanishing point. In the latter case, infant parasite-rates may have reached zero, though some transmission is still occurring. Therefore it seems necessary that the localities should be visited regularly and that all the subjects having fever or having had fever during the intervals between visits should have their blood examined. This active search for cases, such as is being carried out in Greece, seems necessary; but it should be started at least one year before interruption of the spraying campaign is envisaged, in order to be as sure as possible that such interruption will be applied only where appropriate.

Thirdly, malaria control should be implemented with the greatest technical thoroughness, all at one time and in as large an area as possible, preferably bordered by areas where, naturally or as a result of control, there is also no transmission.

If malaria has been eradicated from country A but is still prevalent in countries B and C, and if the inhabitants of each country have free access into and out of the others, the possibility of reintroducing malaria parasites into the area from which they have been eradicated is evident, and such a reintroduction will be proportionate in importance to the movements of the parasite carriers. However, if the adjacent countries B and C have also eradicated malaria, the danger will obviously be smaller; and if all the countries of a continent have done so, it will then only be possible for parasite carriers to be introduced from another continent.

Fourthly, appropriate safeguards, such as those indicated in the fifth report of the Expert Committee on Malaria, should be introduced to ensure rapid detection of any case of malaria and prompt elimination of possible transmission.

Development of Resistance

This is the second point that one must keep in mind in planning malaria-control programmes today.

Resistance to an insecticide, as defined by the Symposium on the Control of Insects, Vectors of Disease, held in Rome in 1953, "is the development of an ability in a strain of an insect to tolerate doses of toxicants which would prove harmful to the majority of individuals of a normal population of the same species. The term 'behaviouristic resistance' describes the ability to avoid a dose which would prove harmful" (1954).

Behaviouristic resistance may not interfere with malaria control. It did not in the case of *A. albimanus*, described by H. Trapido, but physiological resistance, when high, is bound to interfere. Physiological resistance has probably not yet occurred in many species of anophelines; but we know that it has been proved in the case of *A. quadrimaculatus* in the USA and of *A. sacharovi* in Greece and, very likely, in Lebanon. Recent information from Greece indicates that the other two vector species, *A. maculipennis* and *A. superpictus*, have also developed some degree of DDT resistance. One may argue that DDT resistance developed in Greece because DDT was also used against the aquatic stages of the mosquito; but in the two Lebanese villages where *A. sacharovi* was found to have become resistant this was not the case. These facts are a warning that the development of insecticide resistance may eventually occur with other anopheline vectors, and that therefore the continuation, year after year, of house-spraying may lead to a failure of the insecticide to control malaria. At this time, the degree of resistance of *A. sacharovi* in Greece to chlorinated-hydrocarbon insecticides is not such as to suggest that adequate dosage or appropriate repetition of spraying operations should not control transmission; and in September 1953 the Expert Committee on Malaria could state that "in no case has such resistance so far constituted an important barrier to malaria control" (WHO 1954). Still, we have been informed that in 144 villages in Greece cases of malaria occurred in 1953 in spite of the fact that the villages had been "preventively" sprayed. This seems to indicate that, in these particular cases, recent DDT deposits had failed to prevent transmission.

Conclusions

We have already said that instances of DDT resistance in anophelines are rare in spite of the fact that in many countries this insecticide has been sprayed for at least nine or ten years. But can we disregard the warning of Greece? If we do, we may be faced with the fact that after some years of a large-scale programme, resistance will develop. If by that time malaria has not been fully controlled, we may replace the insecticide by another; but there is reason to believe that once resistance has developed to one of the chlorinated-hydrocarbon insecticides, such as DDT, it very soon extends to the other members of the same chemical group as well. If this occurs, one can foresee that transmission may multiply unchecked among a popula-

tion who would have lost most of the immunity they had acquired before the campaign started; and the health services would have either to use organic-phosphorus insecticides—at best, more dangerous and more expensive—or to avail themselves of the techniques of malaria control that prevailed before the second World War, though these would surely be more efficient today if they were based on the use of modern antimalarials. If resistance develops when malaria has been eradicated, it would appear that no dire consequence would follow, because the insecticide campaign could perhaps be withheld. But one of the safeguards that must be available when discontinuing a malaria-control campaign, and precisely the most effective and economical one—immediate house-spraying—would have become inoperative.

To heed the warning from Greece means to plan the programme in such a way that house-spraying could be safely discontinued before insecticide resistance develops. Obviously the larger the area throughout which the end-point of transmission is attained all at the same time, the earlier and the more safely can the spraying be discontinued. No less important than the size of the area and its configuration will be the methods adopted for control; they should prevent (so far as present knowledge allows) the development of resistance; that is, indiscriminate spraying and the use of the insecticide for larval control should be avoided.

It is realized that this new pattern of planning, which must be conceived of in terms of huge areas, of total coverage, of great thoroughness of control, and of a minimum of years, will be difficult and that its implementation will require more funds, more trained personnel, greater efficiency of operations, and better systems of epidemiological surveillance than are necessary now. Further, it may require inter-country co-ordination of programmes. These difficulties would be compensated for, however, not only by better and quicker results, but also by the hope that after a few years of intense efforts, malaria control would no longer represent an important item in the yearly budget of the health administration. Should this new and bold planning not be adopted, the penalty might vary. In the more favourable cases, house-spraying would remain effective, but would have to be continued year after year; in the unfortunate cases, insecticide resistance would develop, increase, become polyvalent, and the whole programme might ultimately end in failure.

References

Chron. Wld. Hlth. Org., **8**: 117, 1954.

Chron. Wld. Hlth. Org., **8**: 129, 1954.

Livadas, G. A.—*Riv. Parassit.*, **14**: 61, 1953.

Livadas, G. A. and Georgopoulos, G.—*Bull. Wld. Hlth. Org.*, **8**: 497, 1953.

Raffaele, G. and Coluzzi, A.—*Riv. Malar.*, **32**: 203, 1953.

World Health Organization, Expert Committee on Malaria—*Wld. Hlth. Org. techn. Rep. Ser.*, **8**: 22, 1950; **39**: 12, 1951; **80**: 1954.

World Health Organization, Interim Commission, Expert Committee on Malaria—*Off. Rec. Wld. Hlth. Org.*, **8**: 15, 1948.

NOTES AND NEWS

W.H.O. Develops Exchange of Medical Publications

Medical libraries throughout the world, which previously offered their surplus publications to other medical institutions for free distribution and exchange through UNESCO, will now offer them through the agency of the World Health Organization's Headquarters, in Geneva.

According to information received from Geneva, WHO will inform medical libraries in its Member States concerning the availability of medical books and periodicals offered by libraries. It will not itself collect and make shipments of such material, but will act as a central information service for medical libraries wishing to exchange and distribute material.

All shipments of publications will be made directly from one medical library to another, after agreement has been reached on the exact items required and on the question of transport costs.

WHO, through its Library and Reference Section, is already in touch with a great many medical libraries throughout the world, but will be glad to receive from new medical libraries offers of exchanges, accompanied by lists of the most-needed books and particulars of periodicals.

Improving Health of School Children

The Union Health Ministry is busy finalising a pilot scheme for improving the health of school children in the age group of 5 to 14. The scheme will cost five crore of rupees.

Milk, fresh fruit, "gur," germinated gram and other nutritious food are proposed to be served to children during school hours under the scheme.

The country has a school-going population of 85·97 million in the age group of 5 to 14 and some 20 per cent. are expected to benefit under the scheme. Although the areas in which it will operate have not been earmarked so far, it is considered most likely that the scheme will be launched first in community development blocks all over the country.

A proper medical check-up will be made of all children coming under the scheme. Health officers and inspectors will be appointed to maintain progress reports.

The Central Health Council, meeting at Trivandrum on January 23, had viewed with concern the lack of adequate student health services throughout the country. Recognising the urgent need of adequate health services for this important group in the community, the Council had recommended that all State Governments should take immediate steps to establish a student health service under the Health Departments so as to give the entire student population proper medical care, including nutrition and physical education.

Radiological Treatment

Dr. Jinabhai L. Desai, President of the Indian Radiological Association, pleaded for the formation of a Board of Studies consisting of eminent teachers in this country

to raise the present low standard of radiology prevailing in the country. He said that it was not possible at present to separate radiodiagnosis and radiotherapy till they got well-equipped therapy centres in the country which at present were few in number but they should gradually work up, in introducing this very essential reform.

The standard of post-graduate education in radiology according to him, lagged behind that imparted in other countries and the Association should continue its efforts to convince the various Universities in the country that it was in the best interest of medical service to institute the two-year syllabus of study in the subject recommended by them as far back as 1948.

"Bombay and Lucknow still cling to the old style Cambridge diploma syllabus which is completely outmoded. Calcutta until now has never instituted any post-graduate course in radiology and though the Calcutta University has now laid down a course of two year's study in this subject, it is regrettable that no medical college has asked for affiliation to start this course.

"The Madras University is to be highly complimented that it has accepted the recommendations of this Association and has now established a two-year course of study with minor modifications. It is my earnest hope that a uniform syllabus of study as recommended by the Association will be introduced in all the Universities at an early date. It would be still better if this Association which has as its members eminent teachers is given the task of and made responsible for post-graduate education in radiology. In the U.K., the Royal Faculty of Radiologists and in U.S.A., the American College of Radiology are conducting the post-graduate education in their respective countries with great success and have been mainly responsible for the present very high standard of radiological practice and the phenomenal advance this science has made during the last few years, both in diagnosis and therapy."

Indian Association of History of Medicine

The Eighth Anniversary of the above Association was celebrated on 5-2-55 in the Madras Medical College, with Dr. A. L. Mudaliar, Vice-Chancellor, Madras University, in the chair.

Dr. Mudaliar, in his introductory remarks stressed the importance of the study of History of Medicine to the profession, and for the progress of Medical Sciences, mentioning instances where observations and passages in ancient or mediaeval literature, helped by giving clues to the later discoveries of useful drugs and lines of treatment. He also told the audience how History of Medicine is taught, encouraged and cultivated in British and American centres of Medical Education and recalled that Prof. Sigerist, Director of Johns Hopkins Institute of History of Medicine who came to India, as adviser to the Bhore Committee, had recommended an Institute of History of Medicine in India. He concluded expressing the hope that the Association would arrange a series of meetings, seminars, exhibitions etc. and promote interest and research in the study of History of Medicine in India.

Dr. Subba Reddy, the Hony. Secretary, read out the aims and programmes of the Association and referred to the efforts of the Association to send a delegate to the International Congress of History of Medicine at Rome and the exhibits sent to the Surgeons Hall of Fame at Chicago. He stressed the need to search, save, preserve and collect all the records, books, relics, pictures which are scattered in India and all over the world, which will help in the reconstruction and writing of History of Medicine in India.

Dr. Helen Keller in India

Dr. Keller, reputed internationally for her work on behalf of the blind, is now on a tour of India on the Government's invitation. Miss Keller is International Relations Counsellor to the American Foundation for Overseas Blind.

In her efforts to increase the public understanding of their problems, she has circled the world at least five times. Once again she is out on a 40,000-mile good-will tour of India, Burma, Pakistan, the Philippines and Japan. She believes that the blind, the deaf and the mute should have the right to live and work like their fellow-beings.

Eye Treatment in Rural Areas

The Government of Mysore have accepted a scheme submitted to them for conducting free eye camps in several parts of the State, for the provision of eye treatment to the rural folk who need it.

A sum of Rs. 48,000 has been sanctioned by the Government for this purpose. The Government have also passed orders for the grant of necessary facilities in this respect.

CORRESPONDENCE

The Editor is not responsible for any views expressed by correspondents.

Observations on Myopia in Indians

SIR,—In the second year of our Mahatma Gandhi Free Eye Hospital in Poona the total number of new eye patients was 1702 (males 992, females 710). In this number those of twenty years and under were 715 (439 boys and 276 girls).

In this number of 1702 *errors of refraction* cases numbered 603 (myopia 334, hypermetropia 60, presbyopia 180, and normal refraction cases 29). All these complained of dim vision. In the case of 715 young patients (439 boys and 276 girls) only 24 patients (17 boys and 7 girls) had normal refraction.

Three hundred and six cases (183 boys and 123 girls) showed errors of refraction. In 183 boys the myopic cases were 166 and hypermetropic cases were 17. In 123 girls 115 had myopia and 8 were hypermetropic. In 183 boys the myopic cases were 166 and the percentage incidence was 90·5. In the case of 123 girls the myopic cases were 115 and the percentage incidence

in these cases was 93·7. It is worth noticing that the percentage of myopia was higher in girls.

In 439 boys, 59 were from schools. Out of these 59 boys, 13 had normal refraction, 36 boys had myopia, 3 had hypermetropia while seven others had other eye conditions. Thus 92 per cent had myopia. In 276 girls 58 were from schools. Of these school girls 5 had normal refraction, 3 had hypermetropia while 45 had myopia. Thus in the case of 48 girls the number of myopics was 93·75 per cent.

Percentage of myopia in Indians is increasing every year and this fact I wish to place before you and through your paper before parents and authorities. In the year 1931 in our Haji Bachu Ali Free Ophthalmic Hospital in Parel, Bombay the number of patients was 10,243. Of these 2,860 were cases of refraction. In this number children of 20 years and under were 565 (463 boys and 102 girls). In 463 boys myopic cases were 324 (69·8 per cent) and in 102 girls 62 (60 per cent) had myopia.

In this period of nearly 20 years myopia percentage is greatly *increased*. In 1931 this myopia percentage in boys was 69·3 and in girls 60·0. In 1950 myopic percentage in boys was 92·3 and in girls 93·75. I am etc.

502, Narayan Peth,
Poona 2.

D. D. SATHAYE, F.R.F.P.S.,
Ophthalmic Surgeon & Chief Executive Officer, Mahatma Gandhi Free Eye Hospital.

West Bengal Government Health Scheme, and the Permanent D. B. Incumbents

SIR,—The West Bengal State Government are establishing Union and Thana Health Centres in rural areas, and the permanent District Board staff is being absorbed in the dispensaries under the health scheme. The services of the D. B. incumbents are governed by the Provident Fund and gratuity rules etc. in accordance with the service regulations.

The Health Scheme is really a very healthy move but the services of the absorbed permanent D. B. staff should be maintained and continued with P. F. benefits etc. and their pay scale should be revised and equalised with the scale of the permanent provincial staff of equal ranks. I am etc.,

Amta Charitable Dispensary,
Howrah.

NALINI MOHAN MONDAL.

REVIEWS

Clinical Medicine in General Practice. —Edited by John Fry, M.B.B.S., F.R.C.S., with a Foreword by Sir Henry Cohen, M.D., D.SC., LL.D., F.R.C.P. Pp. 436, 1954. J. & A. Churchill Ltd., London. Price 27*s*. 6*d*.

This book has been written by eight general practitioners and the authors have been drawn from widely different types of practice. The idea of writing such a book can be best seen from what has been written in the preface, "as the standard text books of medicine are written by hospital consultants the problems of general practice cannot be dealt with in such volumes. A need exists therefore for a book to present some information on these common neglected disorders." But when one goes through the book, it appears that clinical medicine in general practice also is based almost on the same principles as one sees in hospital practice. However, the book practically all through is commendably concise, yet clear. The cardiovascular system including use of anticoagulants, the respiratory diseases, the few nervous disorders as included in the nervous system, are really well written. "A day in general practice" (Chapter 3) will give an idea as to the form of work in general practice in the urban area in Great Britain.

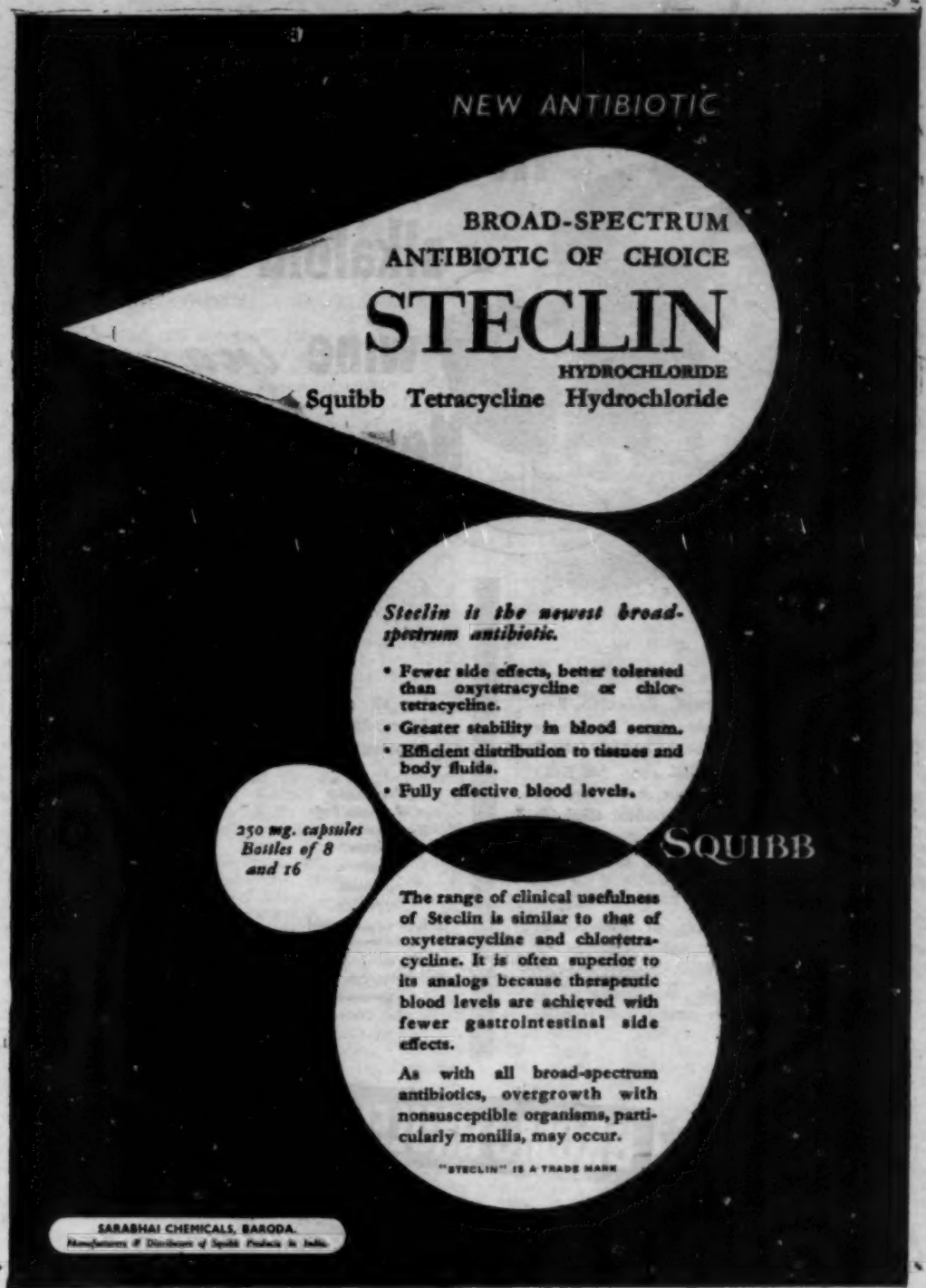
The book cannot be compared with the usual type of book on clinical medicine, as by itself the book is not a complete treatise. But it is an admirable attempt to show how general practitioners can be of value in clinical medicine and practitioners in general are sure to derive profit and pleasure from reading the book.

Practical Procedures in Clinical Medicine. Biochemical and Radiological Investigations.—By R. I. S. Bayliss, M.A., M.D., M.R.C.P., Consultant Physician and Lecturer in Medicine, Post-Graduate Medical School of London. Pp. 484, Second Edition, 1954. J. & A. Churchill Ltd. Price 32*s*.

This is a book intended for senior students, house officers, general practitioners, as the author states in the preface. The book includes minor operations like, "taking blood and giving injections," lumbar puncture, aspiration of the chest etc. as well as the commonly used biochemical tests and a broad outline of the different radiological investigations as necessary in clinical medicine. Simpler things like taking blood and giving injections are of every day occurrence in medical practice, but there is much to learn about these procedures, and the author rightly starts with the chapter "Taking blood and giving injections", and gives a very thorough and practical description of every detail. The chapter on the use of parenteral fluid (Chapter VI) has been dealt with well. These days when newer information is being added about water and salt depletion, one has to consider more than one fact before fluid is infused to a patient. This chapter which has been admirably dealt with has given very valuable information within a comparatively small space. One will read with considerable benefit the different tests of renal function, the various aspects of the disorder of the 'blood', the endocrine and metabolic disorders. The book all through is informative, but the details have been given only of those biochemical tests and practical procedures, which have become part of the routine examination of the patient.

Without minimising the usefulness of the book it may be mentioned that the remarks about electroencephalography and cardioangiography have been rather too brief. A bit of more elaborate descriptions with a few diagrams and plates would have enhanced the usefulness of the book considering the advances in those lines more recently.

The author however deserves congratulations for placing before the students, medical practitioners and teachers as well, a really valuable book.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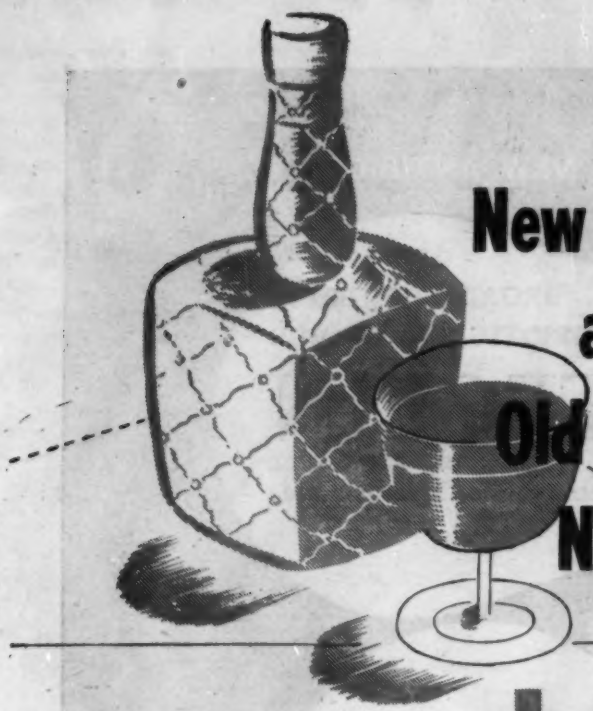

New Rauwolfia alkaloid or Old wine *in a* New glass?

Reserpin, Serpagil, Rauwolfin, Rescinnamine and other 'new' Rauwolfia alkaloids, as indicated by Cal. School of Trop. Med. (*Bull.* 1954. *Jan. Edit.*) and confirmed by our study, are all identical with the traditional alkaloids first isolated by Indian scientists in 1931. New nomenclatures do not indicate new inventions.

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SUPPLEMENT

Journal of the Indian Medical Association

VOL. 24, No. 12 CALCUTTA MARCH 16, 1955

ASSOCIATION NOTES

I.M.A. CENTRAL COUNCIL—ANNUAL MEETING

Proceedings of the 15th Annual meeting of the Central Council of the Indian Medical Association held at Lucknow in the King George Medical College on the 24th and 25th December, 1954.
(Subject to confirmation)

Members present:

1. Dr. S. C. Sen (New Delhi)—President (in the chair). 2. Dr. B. V. Mulay (Sholapur)—Immediate Past President. 3. Dr. D. V. Venkappa (Madras)—Senior Vice-President. 4. Dr. S. Samaddar (Patna)—Vice-President. 5. Dr. B. L. Kapoor (Ludhiana)—Vice-President. 6. Dr. A. P. Mittra (New Delhi)—Hony. General Secretary. 7. Dr. J. N. Bahadur (New Delhi)—Hony. Joint Secretary. 8. Dr. A. N. Roy (Calcutta)—Hony. Joint Secretary. 9. Dr. H. R. Dawar (Delhi)—Hony. Treasurer. 10. Dr. R. Sinha (Calcutta)—Hony. Secretary, J.I.M.A. 11. Dr. K. P. Mehrotra (Kanpur). 12. Dr. J. G. Jolly (Aligarh). 13. Dr. B. K. Vinchure (Nagpur). 14. Dr. Tara Shankar (Jaipur). 15. Dr. S. N. Saxena (Kanpur). 16. Dr. K. K. Sengupta (Calcutta). 17. Dr. Chamanlal Mehta (Bombay). 18. Dr. C. S. Thakar (Bombay). 19. Dr. D. N. Kesarbani (Allahabad). 20. Dr. M. D. Panchmia (Bombay West Sub.). 21. Dr. S. B. Anklesaria (Ahmedabad). 22. Dr. Kumari Ganguben Hadkar (Broach). 23. Dr. V. J. Trivedi (Bhavnagar). 24. Dr. R. M. Kamdar (Bhavnagar). 25. Dr. M. M. Dalal (Bhuj). 26. Dr. T. S. Shunmugasundaram (Salem). 27. Dr. A. K. Sen (Patna). 28. Dr. L. P. Verma (Chapra). 29. Dr. J. N. Chowdhury (Capta). 30. Dr. Sunil Kumar Sen (Berhampore). 31. Dr. Jogendra Nath (Berhampur). 32. Dr. Amiya Banerjea (Calcutta). 33. Dr. Salil Kumar Dutt (Calcutta). 34. Dr. S. S. Sahay (Ranchi). 35. Dr. N. P. Sribastava (Ranchi). 36. Dr. Dilip Sen (Patna). 37. Dr. Hari Anugrah Narain (Patna). 38. Dr. M. C. Nanjappa (Davangore). 39. Dr. S. Pramanik (Santipur). 40. Dr. Amar Mukherjee (Calcutta). 41. Dr. R. P. De (Chaibasa). 42. Dr. P. N. Leelavathy (Kolar). 43. Dr. V. S. Viswanathan (Mysore). 44. Dr. S. C. Kuppanna (Bangalore). 45. Dr. P. K. Garughese (Chingleput). 46. Dr. M. Guru Das (Bangalore). 47. Dr. C. Arumugam (Coimbatore). 48. Dr. N. H. Sampath (Coimbatore). 49. Dr. P. K. Chatterji (Ballia). 50. Dr. Subodh Mitra (Bhagalpur). 51. Dr. L. P. Choudhry (Patna). 52. Dr. S. K. Ghosh (Bihta). 53. Dr. Damodar Prasad (Patna). 54. Dr. Mrs. R. Barat (Patna). 55. Dr. Mohini Mohan Ray (Kotalpur). 56. Dr. Monindra Nath Das (Midnapur). 57. Dr. Debi Prosad Mukherji (Howrah). 58. Dr. A. V. Joshi (Ratnagiri). 59. Dr. Shrinivas Ranade (Poona). 60. Dr. C. R. Sule (Poona). 61. Dr. G. S. Mandlik (Poona). 62. Dr. V. H. Tilak (Satara). 63. Dr. S. Gayaprasad (Nagpur). 64. Dr. H. V. Upadhye (Dharwar). 65. Dr. G. V. Joshi (Hubli). 66. Dr. S. N. Kelkar (Indore). 67. Dr. B. K. Modak (Kalyan). 68. Dr. V. S. Sovani (Poona). 69. Dr. P. D. Gokhale (Poona). 70. Dr. P. B. Dutt (Duttapukar). 71. Dr. D. A. Lakshmana Rao (Bangalore). 72. Dr. D. Shamanna (Chitaldroog). 73. Dr. V. N. Ananda Theertha (Mysore). 74. Dr. S. N. Pathak (Indore). 75. Dr. D. N. Khandekar (Indore). 76. Dr. R. A. Bhagwat (Indore). 77. Dr. T. N. Saha (Araria). 78. Dr. S. N. Sengupta (Gauhati). 79. Dr. J. N. Maitra (Jagatdal). 80. Dr. K. P. De (Garhbeta). 81. Dr. A. M. Sivaraman (Madras). 82. Dr. D. D. Mitra (Gaya). 83. Dr. D. R. Kurana (New Delhi). 84. Dr. K. Veeraiah (Tenali). 85. Dr. R. K. Malhoutra (Amritsar). 86. Dr. Bhawani Das Mehta (Amritsar). 87. Dr. Hari Shankar Prasad (Motihari). 88. Dr. Thakur Raj Nath Singh (Gopal Ganj). 89. Dr. Dharani Dhar Prasad (Aurangabad). 90. Dr. S. Bhattacharya (Bettiah). 91. Dr. M. Yusuf Mirza (Hyderabad). 92. Dr. C. O. Karunakaran (Trivandrum). 93. Dr. T. V. Srinivasan (Trichy). 94. Dr. L. S. Ramachandran (Trichy). 95. Dr. P. R. Annangarachari (Madras). 96. Dr. T. M. Kumaraswami (Vellore). 97. Dr. C. Siva Rama Sastry (Tenali). 98. Dr. N. Vasudevan (Cochin). 99. Dr. A. P. Sibashan (Cochin). 100. Dr. K. Raghavan Pillai (Alwaye Parur). 101. Dr. C. V. Narayana Iyer (Malabar). 102. Dr. G. B. Vaman Rao (Trivandrum). 103. Dr. J. Pereira (Trivandrum). 104. Dr. M. A. Panwala (Bombay). 105. Dr. O. K. Sankaran (Malabar). 106. Dr. K. Parameswaran (Trivandrum). 107. Dr. K. N. Bose (Delhi). 108. Dr. A. C. Ukil (Calcutta). 109. Dr. D. K. Dutta (Monghyr). 110. Dr. J. M. Gupta (Monghyr). 111. Dr. Kanai Lal De (Jhargram). 112. Dr. A. K. Bose (Calcutta). 113. Dr. M. A. Mansuri (Ahmedabad). 114. Dr. S. M. Rao (Kadikalol). 115. Dr. G. H. Thuse (Dhulia). 116. Dr. A. J. Ahmedi (Ahmedabad). 117. Dr. A. J. Divatia (Ahmedabad). 118. Dr. R. L. Shah (Rajkot). 119. Dr. A. P. Mehta (Rajkot). 120. Dr. B. M. Nanavaty (Ahmedabad). 121. Dr. S. N. Mankad (Gujrat & Saurashtra). 122. Dr. A. P. Shukla (Ahmedabad). 123. Dr. Dhirendra Nath Ghosal (Calcutta). 124. Dr. Gopi Krishna Chakravarti (Bagnan). 125. Dr. N. Bhadury (Dibrugarh). 126. Dr. L. K. Barooah (Nowgong). 127. Dr. K. L. Sen Sarma (Tinsukia). 128. Dr. N. C. Banerjee (Tarakeswar). 129. Dr. P. Duarah (Gauhati). 130. Dr. S. Banerji (Tollygunge). 131. Dr. M. K. Pandya (Ahmedabad). 132. Dr. P. M. Roy (Dum Dum). 133. Sr. Sukomal Sen (Calcutta). 134. Dr. Subodh Chandra Ray (Chandernagore). 135. Dr. U. N. Guha Thakurta (Naihati). 136. Dr. C. N. Hazarika (Shillong). 137. Dr. S. C. Deb (Shillong). 138. Dr. B. B. Choudhuri (Bishnupur). 139. Dr. Amir Chand Narula (Delhi). 140. Dr. R. C. Sakhuja (Delhi). 141. Dr. P. C. Bhatla (Delhi). 142. Dr. Jatish Ghosh (Ghatal). 143. Dr. Shurvir Singh (Bikaner). 144. Dr. (Major) H. C. Mallik (Dhanbad). 145. Dr. A. K. Mukherjee (Dhanbad). 146. Dr. S. C. Maitra (Dhanbad). 147. Dr. Sisir Sengupta (Calcutta). 148. Dr. A. K. Nandy (Dooars). 149. Dr. S. K. Kundu (Dooars). 150. Dr. S. N. Bhattacharjee (Dooars). 151. Dr. A. D. Chakravorty (Daltongunj). 152. Dr. M. J. Trivedi (Wardha). 153. Dr. H. S. Andleigh (Jaipur). 154. Dr. Ved Prakash (New Delhi). 155 Dr. Navin Chandra (Kanpur). 156. Dr. D. K. Sabhesan (Trivandrum). 157. Dr. V. K. Rajaram Rao (Anantapur). 158. Dr. G. Dass (Mhow). 159. Dr. K. V. Swami (Madras). 160. Dr. G. Ramachandra Murty (Madras). 161. Dr. T. Chindanandam (Guntur). 162. Dr. V. Anantaram (Guntur). 163. Dr. J. V. R. Sarma (Masulipatam). 164. Dr. N. Lakshmi Kanta Sastry (Bezwada). 165. Dr. Y. V. Ramanamurty (Vizianagram). 166. Dr. M. V. Surya

Prakasa Rao (Chittoor). 167. Dr. U. B. Narayanrao (Bombay). 168. Dr. T. S. Balasubramaniam (Trichy). 169. Dr. R. V. Kotnis (Malegaon). 170. Dr. Ram Rup Prasad (Purnea). 171. Dr. S. Venkatesan (Trichy). 172. Dr. S. P. Bhacca (Surat). 173. Dr. K. K. Harudwala (Surat). 174. Dr. Basudev Maitra (Howrah). 175. Dr. B. K. Basu (Calcutta). 176. Dr. (Capt.) N. C. Sanyal (Baranagar). 177. Dr. T. K. Babur (Bombay). 178. Dr. Narindra Nath Bhattacharyya (Calcutta). 179. Dr. Bimal Bagchi (Calcutta). 180. Dr. Himansu Sekhar Chakravarti (Calcutta). 181. Dr. Naresh Banerjee (Calcutta). 182. Dr. Bimal Ukil (Calcutta). 183. Dr. Sasanka Mohan Chatterjee (Budge Budge). 184. Dr. Pankajaksha Bose (Midnapur). 185. Dr. P. C. Shori (Amritsar). 186. Dr. S. S. Madan (Delhi). 187. Dr. H. Syed Ali (Hyderabad). 188. Dr. R. C. Davare (Hyderabad). 189. Dr. A. S. Puntambekar (Hyderabad). 190. Dr. A. N. Roy (Calcutta). 191. Dr. T. N. Ghosh (Delhi). 192. Dr. J. P. Ganguli (Delhi). 193. Dr. Ram Raksha Dhir (Jullundur). 194. Dr. H. A. Hafeez (Bangalore). 195. Dr. S. Raichowdhury (Calcutta). 196. Dr. Debesh Mukherjee (Calcutta). 197. Dr. T. Y. Narayana Rao (Bellary). 198. Dr. K. P. Tiwari (Banaras). 199. Dr. B. S. Mehta (Banaras). 200. Dr. S. N. Mukherji (Banaras). 201. Dr. Rajeswar Prasad (Arrah). 202. Dr. Chhabil Das (Ludhiana). 203. Dr. Hira Lal (Muzaffarnagar). 204. Dr. R. C. Goulatia (Delhi). 205. Dr. H. N. Shivapuri (Kanpur). 206. Dr. Sain Das Vohra (Amritsar). 207. Dr. P. C. Sen (Chaibassa). 208. Dr. S. N. Ghosh (Dhanbad). 209. Dr. S. S. Ugrankar (Bombay). 210. Dr. K. Damodaran (Mavolikara). 211. Dr. Amar Nath Ghei (Gwalior). 212. Dr. Sudhamoy Banerjee (Nabadwip). 213. Dr. T. J. Lalwani (Bombay). 214. Dr. T. M. Pillay (Tanjore). 215. Dr. Dinesh Varma (Faizabad). 216. Dr. S. P. Varma (Darbhanga). 217. Dr. Raj Mangal Singh (Deoria). 218. Dr. J. H. Kunchur (Sangli). 219. Dr. D. Prasad (Hazipur). 220. Dr. N. K. Prasad (Patna). 221. Dr. W. R. Korpe (Akola). 222. Dr. P. B. Dutt (Duttapukar). 223. Dr. S. N. Pd. Agarawal (Samastipur). 224. Dr. N. M. Lahiri (Tezpur). 225. Dr. K. Narain (Sewan). 226. Dr. J. N. Mathur (Alwar). 227. Dr. Pran Nath Gupta (Allahabad). 228. Dr. R. M. Sharma (Dehra Dun). 229. Dr. S. Raghunath Singh (Nellore). 230. Dr. C. L. Chatrath (Amritsar). 231. Dr. M. M. Siddhu (Lucknow). 232. Dr. S. K. Choudhuri (Banaras). 233. Dr. A. V. Madangopal (Amravati). 234. Dr. J. N. Batabyal (Doom Dooma). 235. Dr. G. K. Gan (Nagpur). 236. Dr. Ram Murti (Dehra Dun).

1. *The Election, if necessary (in the absence of the President and the Vice-President) of the Chairman* :

The President Dr. S. C. Sen, being present, took the Chair and this was not necessary.

Dr. S. C. Sen, the President, gave the information to the House that some representatives of the Branches to the Central Office which had not paid C.F.C. to the Central Office before the due date, were invited subject to the approval of the Central Council. Discussion ensued and Dr. N. Bhattacharyya (Calcutta), Dr. A. K. Bose (Calcutta) and Dr. A. P. Shukla (Ahmedabad) took part in it.

Finally, the following resolution was adopted by the House :—

"Resolved that the representatives of the Branches which had not paid C.F.C. to the Central Office in time, be allowed to attend this meeting of the Central Council with full privileges."

2. *Condolence Resolution* :

The following resolution of condolence was moved from the Chair, all members standing and observing silence :—

"This meeting of the Central Council of the Indian Medical Association places on record its deep sense of sorrow at the sad demise of the following members of the Association and conveys its heartfelt sympathy to members of the bereaved families :—

(1) Dr. K. A. Appaiah (Bangalore), (2) Dr. Wazir Chand (Moga), (3) Dr. H. Hukku (Lucknow), (4) Dr. Murari Lal Goel (Meerut), (5) Dr. H. K. Nanavati (Ahmedabad), (6) Dr. S. T. Thyagaraja Pillai (Negapatam), (7) Dr. Nandolal Sur (Jagatdal), (8) Dr. Jamuna Prasad Singh (Monghyr), (9) Dr. Chaimanlal Manilal Shah (Ahmedabad), (10) Dr. R. M. Safi (Ahmedabad), (11) Dr. J. P. Mody (Ahmedabad), (12) Dr. K. K. Naidu (Jabalpore), (13) Dr. B. K. Vardya (Banaras), (14) Dr. L. R. Lalwani (Delhi), (15) Dr. R. G. Randiva (Mankad), (16) Dr. D. N. Banerjee (Calcutta), (17) Dr. P. Dey (Calcutta), (18) Dr. V. Rajanna (Yeotmal), (19) Dr. D. N. Desai (Vapi), (20) Dr. M. Sundram (Calicut), (21) Dr. B. B. Vaidya (Baroda), (22) Dr. N. Madhava Panickar (Kottayam), (23) Dr. K. C. Upadhaya (Kanpur). (24) Dr. N. Achutan (Malabar). (25) Dr. M. S. Wagle (M. & Karnatak), (26) Dr. S. P. Saxena (Alwar), (27) Dr. A. B. John (Kottayam), (28) Dr. Ishwardas Bhatia (Amritsar), (29) Dr. R. G. Dhayagude (Bombay), (30) Dr. Wadhawan (Kanpur), (31) Dr. J. C. Das (Gauhati), (32) Dr. I. B. Chaudhuri (Barrackpur), (33) Dr. (Major) A. C. Chatterjee (Calcutta), (34) Dr. P. K. Ganguli (Calcutta), (35) Dr. Radhavendra Rao (Hyderabad), (36) Dr. H. N. Kamath (Cochin), (37) Dr. P. K. Varghese (Kottayam), (38) Dr. K. R. Kini (South Kanara), (39) Dr. Ratilal M. Parikh (Ahmedabad), (40) Dr. Upendra Nath Ghosh (Surat), (41) Dr. B. C. Vachhrajoni (Surat), (42) Dr. B. P. Dhalakia (Junagadh), (43) Dr. P. S. Kasture (Manmad), (44) Dr. S. P. Ghosh (Ghatal), (45) Dr. Surendra Nath Bhattacharya (Berhampur), (46) Dr. K. Rajama (Yeotmal), (47) Dr. Karam Chand Mehra (Amritsar), (48) Dr. W. R. Telwelkar (Indore), (49) Dr. Umrao Singh (Delhi), (50) Dr. B. N. Pershad (Banaras), (51) Dr. Dubey (Chakradharpur), (52) Dr. N. C. Ghosh (Calcutta), (53) Dr. Kanai Pal (Alam Bazar), (54) Dr. S. G. Joshi (Bombay), (55) Dr. P. Padmanabha Pillay (Trivandrum).

3. *Messages of Inability to attend* :

Messages of inability to attend the meeting received from the following members were read out :—

(1) Dr. P. K. Guha (Calcutta), (2) Dr. S. W. Hardikar (Hyderabad), (3) Dr. P. K. Chatterjee (Calcutta), (4) Sadhu Chand Vinayak (Ferozpur), (5) Dr. Ramnarayan Bhattacharjee (Berhampur), (6) Dr. M. K. Pandit (Yeotmal), (7) Dr. Gopal Rao (Hyderabad), (8) Dr. H. V. Tilak (Bombay), (9) Dr. V. V. Chetty (Visakhapatnam), (10) Dr. A. R. Sen (Amalner), (11) Dr. N. A. Iyengar (Madras), (12) Dr. H. G. Jambekar (Ahmedabad), (13) Dr. M. R. Patel (Baroda), (14) Dr. B. K. S. Bedi Bahadur (Qadian, Batala), (15) Dr. R. K. Mehta (Palanpur), (16) Dr. (Mrs.) Vimla Nayar (Trichur), (17) Dr. T. D. Jewaratnam (Otacamund), (18) Dr. K. C. Banerjee (Jalpaiguri), (19) Dr. Kirloskar (Hyderabad), (20) Dr. S. S. Urinithan (Mavelikara), (21) Dr. P. D. Sonagra (Morvi), (22) Dr. (Mrs.) A. Lakshmi Bai (Trichur), (23) Dr. S. N. Govil (Budaun), (24) Dr. K. R. Mehra (Amritsar), (25) Dr. K. Gopal (Madhurai), (26) Dr. A. M. Upasani (Nagpur), (27) Dr. P. R. Trivedi (Ahmedabad).

4. *Confirmation of the Proceedings of the 74th Ordinary Meeting of the Central Council held at Hyderabad (Deccan) on the 29th December, 1953. (Copy circulated to the members).*

Resolved that the Proceedings of the 74th Ordinary Meeting held at Hyderabad on 29th December 1953, be confirmed (Proposed by Dr. S. Samaddar (Patna) and seconded by Dr. Sain Das Vohra (Amritsar).

5. *Formation of New Branches during the year.*

Due approval was recorded of the formation of New Branches during the year as reported in the Proceedings of the meetings of the Working Committee.

6. Approval of the Proceedings of the Working Committee Meetings held at :

1. *50th Meeting of the Working Committee held at Delhi on 13th and 14th March, 1954.*

The Proceedings of the 50th meeting of the Working Committee were approved (Proposed by Dr. H. N. Shivapuri (Lucknow), and seconded by Dr. A. S. Puntambekar (Secunderabad).

2. *51st Meeting of the Working Committee held at Jaipur on 24th and 25th July, 1954.*

The Proceedings of the 51st Meeting of the Working Committee were approved (Proposed by Dr. S. D. Vohra (Amritsar) and seconded by Dr. A. P. Shukla (Ahmedabad).

3. *52nd Meeting of the Working Committee held at Bangalore on 21st and 22nd October, 1954.*

The Proceedings of the 52nd Meeting of the Working Committee held at Bangalore were then taken up for consideration.

Dr. N. Bhattacharyya (Calcutta) pointed out that item No. 15(9) of the Proceedings mentioned "To request the Editor to publish a suitable Editorial in the Journal." He wanted to know why this Editorial had not yet been published.

Dr. R. Sinha (Calcutta), the Hony. Secretary of the Journal and Dr. S. C. Sen, the President, informed the House that the publishing of such an Editorial needed collection of all relevant data, which had now mostly been collected and some more data were needed, and as soon as all the informations were obtained, the Editor would write the Editorial. In this connection Dr. A. C. Ukil (Calcutta) offered to supply all data and information which he happened to possess.

The Proceedings were then approved (Proposed by Dr. Chabil Das (Ludhiana) and seconded by Dr. Ram Rakha Dheer (Jullundur).

4. *53rd Meeting of the Working Committee held at Lucknow on 23rd December, 1954.*

The Proceedings of the 53rd Meeting of the Working Committee were taken up for consideration :—

The following corrections and additions were made in the Proceedings. Some of these were typographical errors and the others were minor omissions : (Pages referred to hereunder are those of the cyclostyled copies of the Proceedings.)

Page No. 1 : List of Co-opted Members :
Dr. A. C. Ukil's name was inadvertantly left out from the list of the co-opted members. This was to be included.

Page No. 2 :
In the list of condolence resolution, the 5th name was Dr. Ram Nath Chopra (Jullundur) and not "Dr. Prem Nath Chopra."

Page No. 3 : Item No. 4(3). 6th line from the bottom :
To add "other" before "allied".

Page No. 5 : Item No. 9, towards the end of 2nd para :
After the word "being", delete "Pediatrics" and add "Mal-nutrition, its clinical features and value of repeated plasma infusions".

Page No. 6 : 6th para from above :
It should read as "Local Goverument fully co-operated in the work."

Page No. 6 : Item No. 12 : 1st Line :
Insert "Dr. J. Majumdar" (Calcutta) instead of "Dr. A. K. Bose."

Page No. 7 : 1st Line :
Insert "Dr. J. Majumdar" instead of "Dr. A. K. Bose".

Page No. 7 : Item No. 5(c) :
List of suspended branches to be corrected, and brought up-to-date.

Page No. 11 : Item No. 2 :
After the words "objecting to", add the words, "an article" and delete "write up".

Page No. 11 : Item No. 6 :
In the Sub-Committee formed on the subject of Indian Medical Council Act, the name of Dr. A. N. Roy (Calcutta) to be added after the name of Dr. S. Roy Choudhury (Calcutta).

Discussion arising out of the Proceedings under consideration :

1. Dr. N. Bhattacharyya (Calcutta) brought to the notice of the House that the post-graduate training of Licentiates which had been stopped by the Medical Academy of Vienna needed to be re-opened.

Discussion took place on this question in which Dr. A. N. Roy, Dr. Ram Rakha Dheer (Jullundur), Dr. S. S. Ugrankar (Bombay), Dr. H. N. Shivapuri (Lucknow), Dr. S. Samaddar (Patna), Dr. J. Majumdar (Calcutta), Dr. R. C. Goulatia (Delhi), Dr. Sain Das Vohra and others took part.

The Honorary General Secretary assured the House that the Central Office was already doing whatever possible and he himself had personally discussed the matter with an Officer in the D.G.H.S. Office.

Several suggestions were made and discussed and the House felt that a Sub-Committee should be formed which should go into the question of all the handicaps suffered by the Licentiate members of the Association with regard to their post-graduate training and their service conditions. The following comprised the Committee :

1. Dr. S. C. Sen (New Delhi), 2. Dr. D. V. Venkappa (Madras), 3. Dr. A. P. Mittra (New Delhi)—Convener (with powers to copt.).

It was decided by the House to pay the actual T.A. to the members of the Committee.

2. The House next discussed the letter of the Delhi Medical Association regarding the Delhi Medical Laboratories Registration Bill.

Dr. R. C. Goulatia (Delhi) explained the position arising out of this Act if it was given assent to by the President. Dr. A. K. Bose (Calcutta) wanted the Bill to be amended in such a fashion that all the objectionable clauses were removed from it and he considered that some standards were needed for regulation of the Laboratories. Dr. K. K. Sen Gupta (Calcutta) was totally opposed to the Act. Dr. C. O. Karunakaran (Trivandrum) was also opposed to the Act.

After some further discussion, the House passed the following resolution :—

"The Indian Medical Association after a thorough discussion of the Delhi Laboratories Registration Bill—as passed by the Delhi Legislative Assembly in October, 1954—express their unqualified disapproval of the action of the Delhi State Assembly and register a strong protest against their un-called for encroachment on the privileges of the Medical Profession on the following grounds :—

1. That the Delhi Branch of the Indian Medical Association an accredited representative body of Medical Profession was not consulted.
2. The Bill encroaches on the fundamental rights conferred on qualified medical persons by Universities and Statutory bodies.
3. The Commissioner and Director in the Bill cannot by their mere position claim to be equipped for prescribing standards of classes of laboratories and of knowledge of the doctors in-charge of them.
4. That Laboratories differ in kind of work done in them and all four sections mentioned in the Bill—item No. 7(b) viz. Chemistry, Serology, Pathology, Bacteriology—are not all essential for every clinical laboratory.
5. That condition in item 7(c) viz. of whole-time speciality work of the incumbent will increase cost of laboratory work, deprive a qualified general practitioner of his legitimate means of making an additional income, deprive a practitioner an easy access to Laboratory and investigation, due to scarcity of Licensed pathologists and will cause great damage to the patients' interest.
6. That the Bill invokes uncalled for and unwarranted punishment on the practitioner who contravenes the conditions of the Bill, especially as the Clinical Pathologist is an aid to diagnosis and

prognosis and cannot by himself do harm to the patients.

7. That the Bill, if passed into Act, will lead to similar Acts in all Branches of medical science, leading to confusion and chaos in the medical profession and untold damage to public interest.

The President of the Indian Union be requested not to give his assent to the Bill to pass it into Act and the Delhi Health Minister be requested to receive a deputation of the Delhi Branch of the Indian Medical Association to discuss the Bill before it is presented to the President for sanction."

3. Dr. Chamanlal M. Mehta's letter to the Honorary General Secretary regarding the present position of the Employees' State Insurance Corporation in Bombay, appended as an annexure to the Annual Report, was next taken up.

Dr. M. A. Panwala (Bombay) pointed out that the Bombay Branch was against the revision of the formulary as suggested in that letter.

The House decided to refer this letter to the Bombay State Branch for their consideration, and if some agreement could be reached between the Bombay Branch and Dr. Chamanlal M. Mehta, then only this letter would be forwarded to the proper authorities.

4. Dr. N. Bhattacharyya (Calcutta) wanted the question of closing down of the D.T.M. Course at the Tropical School of Medicine to be taken up. After some discussion and information given by Dr. A. C. Ukil, it was decided to appoint a Sub-Committee with the following members :—

1. Dr. J. Majumdar (Calcutta)—Convener, 2. Dr. K. K. Sen Gupta (Calcutta), 3. Dr. A. K. Bose (Calcutta), 4. Dr. S. Roychaudhury (Calcutta), 5. Dr. A. N. Roy (Calcutta)—with powers to co-opt.

The Proceedings as corrected above, were then approved (Proposed by Dr. N. Bhattacharyya (Calcutta) and seconded by Dr. R. Sinha (Calcutta).

7. *To write off whole or part of the arrears against any individual member or a Branch or other outstandings if considered necessary.*

The Central Council approved of the action taken by the Working Committee during the year regarding the writing off of the arrears of C.F.C.

8. *Adoption of Annual Report for the previous year.*

The Annual Report as presented, with necessary corrections, with Annexure was approved by the House (proposed by Dr. G. V. Joshi (Hubli) and seconded by Dr. A. C. Ukil (Calcutta).

9. *Adoption of the Audited Accounts for the year 1953-1954.*

(Central Office) : } Copies circulated
(Journal Dept.) } to the members.

Central Office :

The Audited Accounts of the Central Office were next taken up.

Dr. N. C. Sanyal (Baranagar) pointed out that there was a discrepancy in the number of badges and in the amount shown as their value, taking each Badge at Rs. 2/-. It was explained that the actual number of badges received from Calcutta at the time of the shifting of Central Office to Delhi, was different from the number shown in the books at that time. Furthermore, about 20 badges were lost at one of the Conferences a few years ago when they were taken there for sale. The Treasurer also pointed out that some of the Badges in the stock were damaged and so they were not fit for being sold. He also said that the Auditors had suggested that the value of approximately Rs. 150/- for Badges that had been lost, should be written off.

The House decided that this matter be taken up by the Working Committee at its next meeting and proper adjustments made.

Dr. R. C. Goulatia wanted information regarding the procedure adopted regarding the appointment of a new Steno-typist at the Central Office. The necessary information was supplied by the Honorary General Secretary.

Dr. B. V. Mulay objected to different funds of the Association lying in the current accounts. He particularly pointed out a sum of Rs. 27,796/15/10 in a current account. It was explained to him that towards the end of the year, a lot of money was received as C.F.C. from different Branches and also as deposits from candidates going abroad.

A question was asked regarding "General Charges" as to what did this item cover. The President explained that 7½ million Dienestrol Tablets were received from a firm in U.S.A. through the World Medical Association for distribution and the money spent for clearing and forwarding these tablets was included in this item. It was also explained that the figure of Rs. 500/- shown as expenses for enrolment of members was actually the grant made to the Assam State Branch for propaganda purposes. Instead of being shown as Propaganda, it was the advice of the Auditors that it should be, in this particular case shown as "Expenses for enrolment of members."

The Audited Accounts of the Central Office as presented were then approved by the House (Proposed by Dr. H. N. Shivapuri (Lucknow) and seconded by Dr. H. Syed Ali (Hyderabad).

Journal Department :

The Audited Accounts of the Journal Department were then taken up for consideration.

Dr. N. C. Sanyal (Baranagore) wanted to know about an item on the Income side shown as "Profit on sale of Machinery" amount to Rs. 522/-11/-. Dr. J. Majumdar wanted to know what machinery was sold, what procedure was adopted to sell it, to whom it was sold and what was its original cost.

During the discussion that followed, Dr. R. Sinha, Hony. Secretary of the Journal, informed the House that an old addressograph machine along with an embossing machine to emboss the addressing plates was sold. The exact figure of its original cost could not be supplied off hand as these have been purchased several years ago. In addition to the advertisement in the newspapers, letters were sent out to Pharmaceutical firms who manufacture or distribute their materials for the use of doctors and who would be likely customers for such commodities. Only 2 or 3 replies were received from interested parties. The machine was ultimately sold for Rs. 2,000/- only to M/s. Indian Health Institute and Laboratory Ltd. of Calcutta.

Dr. S. S. Madan (Delhi) enquired about the procedure adopted by the Journal Office for purchasing paper and whether advantage was taken of newsprint quota allotted by the Government. The Hony. Secretary of the Journal Dr. R. Sinha, replied saying that newsprint was not now being used for the Journal for several years; a better quality of paper was being used. The paper was bought from the usual suppliers locally and on a few occasions, larger quantities of paper had been imported direct from Sweden which effected a considerable saving.

On a question being asked regarding the method of stock keeping of the paper, Dr. Sinha replied that the Auditors had recently given them instructions regarding this.

On a question being asked regarding the grant of loans to the staff of the Journal Office, Dr. Sinha replied that whenever a loan was given, due precautions were taken and since the beginning of this year, no loan had been given at all. The Auditors were going to prepare draft rules regarding this and the Provident Fund Rules on the lines of the Government of India Rules.

Dr. S. C. Sen, the President, at this stage pointed out that it was not always possible to give full details and answers to questions off-hand. He therefore requested that those members who wished to have further information, could write to the office.

The House recommended that the Enquiry Committee appointed to go into the working of the Central and Journal Offices should take in its purview the position regarding the excess number of copies of the Journal.

The Audited Accounts of the Journal Office were then duly adopted (Proposed by Dr. H. N. Shivapuri (Lucknow) and seconded by Dr. A. S. Puntambekar (Secunderabad).

3. *Audited Accounts of "YOUR HEALTH".*

The Audited Accounts of YOUR HEALTH were duly adopted (Proposed by Dr. G. V. Joshi (Hubli) and seconded by Dr. H. N. Shivapuri (Lucknow).

The House also decided that time had come to approach the State Branches to find out whether they would like to publish YOUR HEALTH in their regional languages just as APKA SWASTHYA was being published by Banaras Branch, in view of the fact that the popularity of the regional-language Journals might be more than that of the English Journal.

Operation of Bank Accounts :

The following resolutions were passed unanimously :

1. "Resolved that the Accounts of the Indian Medical Association will jointly be operated by the Honorary General Secretary or any one of the Hony. Joint Secretaries at Delhi, with the Hony. Treasurer."
2. "Resolved that the Imprest Account of the Journal of the Indian Medical Association will be operated jointly by two of the following officers, viz., the Editor (Dr. P. K. Guha), the Assistant Editors (Dr. C. L. Mukherjee and Dr. H. Chakravarti) and the Hony. Secretary of the Journal (Dr. R. Sinha)."
3. "Resolved that Dr. P. K. Guha, the Editor and Dr. R. Sinha, the Hony. Secretary, be authorised to operate accounts of YOUR HEALTH of the Indian Medical Association.

10. *Consideration of the Budget Estimates for the coming year 1954-55* :

1. Central Office.
2. Journal Department.
3. Your Health.

Central Office :

The Budget Estimates of the Central Office for the year 1954-55 were taken up and were duly approved with the following changes :

1. Under the head "Books account", the amount was increased from Rs. 200/- to Rs. 500/-.
2. Under the heading "Propaganda", the amount was reduced from Rs. 3,000/- to Rs. 1,000/-.

—Proposed by Dr. H. N. Shivapuri (Lucknow). Seconded by Dr. G. V. Joshi (Hubli).

Journal Office :

The following changes were made in the Budget Estimates of the Journal Department for 1954-55 :

1. Under the head "Propaganda and Publicity", the amount was reduced from Rs. 2,000/- to Rs. 1,000/-.
2. Under the head "Salary and Establishment", the amount was reduced from Rs. 53,500/- to Rs. 50,000/-.
3. Under the head "Uniform to bearers," the amount was increased from Rs. 600/- to Rs. 1,000/-.
4. The Budget Estimate under the heading "Repairs and Renewals", was maintained, but a directive was given that the necessary repairs could be carried out, but no renewals were to be taken pending the Report of the Enquiry Committee.
5. The amount (Rs. 7,000/-) budgeted for "Travelling (Foreign)" was voted down.

After the changes mentioned above, the Budget Estimates of the Journal Department were approved (Proposed by Dr. A. C. Ukil (Calcutta) and seconded by Dr. J. Majumdar (Calcutta).

"YOUR HEALTH" :

The Budget Estimate of YOUR HEALTH was taken up for consideration.

After some discussion, the Budget Estimate as presented was approved (Proposed by Dr. G. V. Joshi (Hubli) and seconded by H. N. Shivapuri (Lucknow).

11. *Election of the Office Bearers* :

Honorary General Secretary :

The name of Dr. A. P. Mittra (New Delhi) was proposed by Dr. H. N. Shivapuri (Lucknow) and seconded by Dr. N. Bhattacharyya (Calcutta).

There being no other proposal, Dr. A. P. Mittra (New Delhi) was elected unanimously.

Honorary Joint Secretaries :

Dr. A. P. Mittra (New Delhi) proposed the names of

1. Dr. S. N. Mitter (New Delhi)
2. Dr. J. N. Bahadur (New Delhi)
3. Dr. A. N. Roy (Calcutta).

The proposal was seconded by Dr. H. N. Shivapuri (Lucknow).

There being no other proposals, the above three were declared duly elected as the three Honorary Joint Secretaries.

Honorary Assistant Secretaries :

Dr. A. P. Mittra (New Delhi) proposed the names of :

1. Dr. Ved Prakash (New Delhi)
2. Dr. M. A. Panwala (Bombay)
3. Dr. Tara Shankar Mathur (Jaipur)

The proposal was seconded by Dr. P. C. Bhatia (Delhi).

There being no other proposals, the above three members were declared duly elected as the three Honorary Assistant Secretaries.

Honorary Treasurer :

Dr. A. P. Mittra (New Delhi) proposed the name of Dr. H. R. Dawar (Delhi). Dr. J. Majumdar (Calcutta) seconded the proposal.

The name of Dr. A. C. Narula (Delhi) was proposed by Dr. S. S. Madan (Delhi) and seconded by Dr. J. P. Ganguli (Delhi).

Dr. A. C. Narula withdrew his candidature.

Dr. H. R. Dawar (Delhi) was then declared duly elected as the Honorary Treasurer.

12. *Election of the Journal Committee* :

Hony. Editor of the Journal of the I.M.A.

The name of Dr. P. K. Guha (Calcutta) was proposed by Dr. S. N. Mukherjee (Banaras). The proposal was seconded by Dr. F. C. Shori (Amritsar).

There being no other proposals, Dr. P. K. Guha (Calcutta) was declared duly elected as the Hony. Editor of the Journal of the I.M.A.

Two Assistant Editors :

The names of Dr. C. L. Mukherjee (Calcutta) and Dr. H. Chakravarti (Calcutta) were proposed by Dr. J. Majumdar (Calcutta) and seconded by Dr. A. C. Ukil (Calcutta).

There being no other proposals, Dr. C. L. Mukherjee (Calcutta) and Dr. H. Chakravarti (Calcutta) were declared duly elected as the two Asst. Editors of the Journal of the I.M.A.

Hony. Secretary, Journal of the I.M.A. :

The name of Dr. R. Sinha was proposed by Dr. A. P. Mittra (New Delhi) and seconded by Dr. S. K. Chaudhuri.

There being no other proposal, Dr. R. Sinha (Calcutta) was declared duly elected, as the Hony. Secretary of the Journal of the I.M.A.

5 Other members of the Journal Committee :

On the unanimous desire of the House that the retiring members be re-elected, no other proposals were put forward.

1. Dr. A. D. Mukharji (Calcutta)
2. Dr. A. Das (Calcutta)
3. Dr. S. C. Seal (Calcutta)
4. Dr. S. M. Ghosh (Calcutta)
5. Dr. H. K. Roy (Calcutta)

were declared duly elected as 5 other members of the Journal Committee.

13. *Appointment of the Auditors for auditing the accounts of the Central Office and the Journal Office* :

The House unanimously re-elected M/s. Khanna Annadhanam, Chartered Accountants, Delhi, and M/s. G. Basu and Co., Chartered Accountants, Calcutta, as Honorary Auditors for the Central Office, Delhi and Journal Department, Calcutta, respectively.

Proposed by Dr. H. N. Shivapuri (Lucknow)
Seconded by Dr. A. P. Mittra (New Delhi).)

14. *Appointment of the Honorary Legal Advisors for the Central and Journal Office* :

Mr. K. K. Raizada of Delhi and Mr. R. K. Deb of Calcutta were unanimously re-elected as Honorary Legal Advisors for the Central Office, Delhi and Journal Department, Calcutta, respectively.

Proposed by Dr. H. N. Shivapuri (Lucknow)
Seconded by Dr. R. Sinha (Calcutta).)

15. *Amendment of Rules or/and Bye-Laws (Letter No. 597/53-54 dated 24-4-1954 of the Hony. Secretary, Madras Branch* :

The resolution of amendment to the rules re. representation of Branches on the Central Council which had been duly circulated to the Branches, was then considered.

The amendment was put to vote and was lost by a large majority of votes.

16. *Resolutions brought forward by the Working Committee* :

(*a*) The following resolution was taken up for consideration :

"This meeting of the Central Council of the I. M. A. noted the remarks made in the Five Year Plan Progress Report of 1953-54 (page 255) that "the lack of trained personnel has been a factor of great difficulty in the implementation of health schemes". As against this the I. M. A. finds a considerable number of unemployed or not gainfully employed medical men, crowding in the cities, particularly in Calcutta causing thereby wastage of valuable technical man power of the country.

The meeting therefore requests the Central and the State Governments to utilise the good offices of the I. M. A. in recruiting medical personnel and for their planned distribution throughout the country.

(*b*) That this meeting further notes that the Central and the State Governments have during the first three years of the Five Year Plan, spent only Rs. 2/- crores 95 lakhs and Rs. 4 crores 13 lakhs respectively (total being Rs. 7 crores 7 lakhs) out of Rs. 103 crores provided for the development of health services during the Five Years ending 1956.

This meeting while urging upon the Government to step up the development plan more energetically, appeals to all State and Local Branches of the I. M. A. to fully utilise the provisions of development of health and sanitation in the plan in their respective areas, particularly in respect of improvement of rural and urban water supply, rural dispensaries and health centres, hospital beds etc.

(*c*) With this object in view, this meeting fully endorses the recommendation of the Calcutta Branch of the I. M. A. for suitable financial grant by the Central Government for speedy implementation of the Scheme for continuous supply of filtered water in the city of Calcutta.

Brought forward by Dr. S. Roychaudhury (Calcutta)
Seconded by Dr. J. Majumdar (Calcutta.).

After some discussion, it was decided to re-draft the resolution to which the proposer agreed. The following resolution was then unanimously passed :—

Be it resolved that :—

(*a*) "This meeting of the Central Council of the Indian Medical Association notes the remarks made in the Five Year Plan Progress Report of 1953-55 (page 255) that "the lack of trained personnel has been a factor of great difficulty in the implementation of health schemes". On the contrary the Indian Medical Association finds a considerable number of unemployed or not gainfully employed medical men in many parts of the country leading to wastage of valuable technical man power of the nation.

This meeting therefore requests the Central and the State Governments to utilise the good offices of the Indian Medical Association in employing the required number of medical personnel and for the planned utilisation of the available personnel in execution of the relevant development Scheme.

(*b*) That this meeting further notes that the Central and the State Governments have during the first three years of the Five Year Plan, spent only Rupees two crores 95 lakhs and rupees 4 crores 13 lakhs respectively (total being rupees 7 crores and 7 lakhs) out of Rs. 103 crores provided for the improvement of health services as incorporated in the Five Year Plan ending in 1956.

This meeting therefore urges upon the Government to step up the development plan more energetically with the help of the Indian Medical Association."

(2) The other resolution sponsored by Dr. S. Roy Chaudhury (Calcutta) and Dr. J. Majumdar (Calcutta) was referred to the Subjects Committee.

(3) Resolution brought forward by Dhanbad Branch.

(4) Resolution brought forward by Nowanshahr Branch.

(5) Resolution brought forward by Dr. B. N. Ghosh (Calcutta).

These resolutions were referred to the Subjects Committee.

17. *Resolutions brought forward by State or Territorial Branches* :

(1) The first resolution brought forward by the Travancore-Cochin State Branch was referred to the Subjects Committee.

(2) The second resolution brought forward by the Travancore-Cochin State Branch was referred to the Working Committee.

18. *Resolutions brought forward by the Local Branches* : Nil.

19. *Resolutions brought forward by individual members of the Association* :

1. Dr. S. P. Agrawal's (Samastipur) scheme of "Health Insurance in Rural and Urban Areas" was then considered, though it was not in the form of a resolution.

Dr. A. P. Mittra also informed the House that this item had reached the office very late but due to the request of State Branch concerned, it was being taken up here as a special case.

Dr. S. C. Sen, the President allowed Dr. Agrawal to speak about his scheme which he did. The House was informed that this scheme of Dr. Agrawal had been approved at the last Bihar State Medical Conference.

The House was of the opinion that since the State Branch had approved of it, it was only proper that it should be tried firstly in a selected area in that State as a pilot Scheme for a reasonable period. The experience thus gained would then be available to the Central Council while considering this Scheme or its modified form, at a future meeting.

20. *Consideration of invitations from Local Branches for holding the 32nd All-India Medical Conference* :

The Honorary General Secretary informed the House that for the Conference in 1955, two invitations had been received. They were from :

(1) Jullundur Branch (Punjab)
(2) Jaipur Branch (Rajasthan).

He informed the House that the Working Committee had recommended that the next Conference be held at Jaipur by accepting the invitation of the Jaipur Branch.

The House approved of the decision of the Working Committee.

21. *Report from the Committee, Sub-Committees, if any* :

1. *Report of the Sub-Committee on the question of conditions of services of A. M. O. in the Tea Gardens* :

This Report was to have been submitted to the Working Committee but since it could not be completed in

time, it was the desire of the Working Committee that it be presented to the Central Council on the following day at its Annual meeting. The Report being now ready, was submitted signed by (1) Dr. K. K. Sen Gupta (Calcutta), (2) Dr. P. C. Duarah (Gauhati), (3) Dr. J. Majumdar (Calcutta)—the convener.

Dr. J. Majumdar read out the report for the information of the House and it was duly adopted.

22. *Papers concerning the World Medical Association* :

Dr. S. C. Sen, the President, gave a short Report about the General Assembly of the World Medical Association which he attended as a Delegate of the Indian Medical Association, along with Dr. U. R. Pargaonker (Hyderabad)—(Delegate) and Dr. Major General Bhatia (Alternate Delegate).

He said that the next Assembly of the World Medical Association was to be held in Vienna in September, 1955.

23. *Any other business with the permission of the President* :

1. With the special permission of the President the following resolution was moved by Dr. A. K. Bose (Calcutta) and seconded by Dr. H. N. Shivapuri (Lucknow). The resolution was unanimously adopted and the following Sub-Committee was formed to carry out the terms of reference in the above Resolution :

Resolution :

"Second Five Year Plan"

With a view to help the Planning Commission for the 2nd Five Year Plan, in formulating a comprehensive health plan for the country, all the State Branches be asked to submit to the Central Office their views, on the need of the country with respect to medical relief, medical education and medical research; at the same time a Committee be formed to go into the recommendations of the State Branches and prepare a Memorandum on the basis of the same, for submission before the Planning Commission."

Members :

1. The President. 2. The Honorary General Secretary (or Hony. Joint Secretary). 3. Dr. A. C. Ukil (Calcutta). 4. Dr. H. N. Shivapuri (Lucknow). 5. Dr. A. K. Sen (Patna). 6. Dr. S. Ray Chaudhury (Calcutta). 7. Dr. A. K. Bose (Calcutta)—Convener (with powers to co-opt.).

No travelling expenses would be allowed.

The President, in a few words thanked all his colleagues, particularly the retiring Office Bearers for their all-round co-operation and all members of the Association for their whole-hearted support and goodwill.

Vote of thanks :

Dr. A. K. Bose (Calcutta) and Dr. H. N. Shivapuri (Lucknow) made short speeches thanking the President and recording their appreciation of his able conduction of the meetings of the Central Council and the Working Committee and for his careful guidance in the work of the Association.

A vote of thanks to the Chair was then passed with applause.

The meeting then came to an end.

S. C. SEN, *President.* A. P. MITTRA, *Honorary General Secretary.*

I.M.A. CENTRAL COUNCIL—ORDINARY MEETING

Proceedings of the 75th Ordinary Meeting of the Central Council of the Indian Medical Association, held at Lucknow on 28th December, 1954.

Members present :

1. Dr. S. C. Sen (New Delhi)—(in the Chair). 2. Dr. C. O. Karunakaran (Trivandrum)—Senior Vice-President. 3. Dr. S. B. Anklesaria (Ahmedabad)—Vice-President. 4. Dr. A. P. Mittra (New Delhi)—Honorary General Secretary. 5. Dr. A. N. Roy (Calcutta)—Honorary Joint Secretary. 6. Dr. R. Sinha (Calcutta)—Hony. Secy., Journal, I.M.A. 7. Dr. M. A. Panwala (Bombay). 8. Dr. (Miss) Ganguben Hadkar (Broach). 9. Major (Dr.) O. K. Sankaran (Calicut). 10. Dr. M. D. Panchmia (Bombay West Sub. Br.). 11. Dr. T. N. Saha (Araria). 12. Dr. Rajeshwar Prasad (Arrah). 13. Dr. C. N. Hazarika (Shillong). 14. Dr. S. C. Deb (Shillong). 15. Dr. M. V. Surya Prakasa Rao (Chittoor). 16. Dr. T. K. Babur (Bombay). 17. Dr. K. L. Srivastava (Basti). 18. Dr. D. Prasad (Hazipur). 19. Dr. Bimal Ukil (Calcutta). 20. Dr. P. M. Roy (Dum Dum). 21. Dr. Sasanka Mohan Chatterjee (Budge Budge). 22. Dr. B. B. Chaudhuri (Bishnupur). 23. Dr. M. J. Trivedi (Wardha). 24. Dr. M. C. Nanjappa (Davangere). 25. Dr. T. S. Shanmugasundaram (Salem). 26. Dr. J. Pereira (Trivandrum). 27. Dr. G. B. Vaman Rao (Trivandrum). 28. Dr. K. Parameswaran (Trivandrum). 29. Dr. U. N. Guha Thakurta (Naihati). 30. Dr. (Capt.) N. C. Sanyal (Baranagar). 31. Dr. (Capt.) K. P. Bagchi (Agra). 32. Dr. H. N. Shivapuri (Lucknow). 33. Dr. Amir Chand Narula (Delhi). 34. Dr. Dhirendra Nath Ghosal (Calcutta). 35. Dr. Shanti Prakash Gupta (Lucknow). 36. Dr. S. N. Pd. Agrawal (Samastipur). 38. Dr. D. D. Mitra (Gaya). 38. Dr. F. C. Shori (Amritsar). 39. Dr. Jatish Ghosh (Ghatal). 40. Dr. D. K. Sabhesan (Trivandrum).

The meeting was presided over by Dr. S. C. Sen, the President.

1. *Confirmation of the Proceedings of the Annual Meeting of the Central Council held at Lucknow on 24th and 25th December, 1954* :

The Proceedings (as circulated) were adopted (after certain necessary corrections); Proposed by Dr. Bimal Ukil (Calcutta) and seconded by Dr. N. C. Sanyal (Baranagar).

2. *Delegation to the Working Committee, up to the period the next Working Committee is constituted, all or some of its powers except the power of altering rules and bye-laws* :

The following Resolution was proposed by Dr. A. N. Roy (Calcutta) and seconded by Dr. K. P. Bagchi (Agra).

"Resolved that the Central Council of the Indian Medical Association delegates to the Working Committee all its powers and functions excepting the power of altering the Rules, till the next Annual Meeting of the Council, according to Rule No. 37 of the Indian Medical Association."

The Resolution was carried unanimously.

3. *Any other business with the permission of the President* :

Nil.

The meeting then ended with a hearty vote of thanks to the Chair.

S. C. SEN, *President.* A. P. MITTRA, *Honorary General Secretary.*

BRANCH NOTES

ADILABAD BRANCH—A meeting of the branch was held on 12-12-54 with Dr. Ramchander of Sarojini Devi Hospital in the chair. Dr. Swarup and Dr. Jaganathum talked about the outpatient and inpatient cases treated. Dr. Ramchander gave a talk on Common Diseases of Eye, their treatment and common causes of blindness in India and its prevention, followed by demonstrations of eye operations of the day.

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A meeting of the branch was held on 8-1-55. Dr. Anwar Baig presided. Dr. M. Mousikuddin, Civil Surgeon, gave a talk on Amoebiasis. Some interesting cases were also demonstrated.

ALWAR BRANCH—A meeting of the branch was held on 11-12-54 with Dr. Lekhraj Singh in the chair. Sixteen members were present. An appeal was made to the members to help the District Hospital Fund. A

sub-committee was appointed to scrutinise the conference accounts.

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A meeting of the branch was held on 12-1-55. Dr. R. N. Sachdev presided. Seventeen members were present. A series of cases were presented by Dr. (Mrs.) Chopra, having different cardiac lesions leading to congestive heart failure. Dr. P. N. Mathur gave a description of the 31st All India Medical Conference at Lucknow. A condolence resolution was passed on the sad death of Dr. D. P. Bhardwaj.

ANANTAPUR DISTRICT BRANCH—A meeting of the branch was held on 18-12-54. Dr. V. K. Rajaram Rao spoke on "The Modern Treatment of Asthma". Dr. D. Ramanath was in the chair.

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A meeting of the branch was held on 22-1-55 with Dr. D. Ramanath in the chair. Dr. K. Pushpavathi Devi read a paper on "Gynaecological Bleeding and Female Hormones."

ANDHRA PROVINCIAL BRANCH—Dr. S. C. Sen, the President of the I. M. A. will not be able to tour Andhra till about the middle of April 1955.

ASSAM STATE BRANCH—An emergent meeting of the Working Committee of the branch was held on 17-12-54. Six members were present. Dr. (Mrs.) T. Raichoudhuri presided. The committee decided to give Raj Kumari Amrit Kaur an address in a tea party when she would visit Gauhati on 29-12-54.

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A meeting of the working committee of the branch was held on 6-1-55. Dr. (Mrs.) T. Raichoudhuri was in the chair. Seven members were present. Dr. K. C. Barooah was elected the president for the year 1954-55.

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The Working Committee of the branch met on 2-2-55. Eight members were present. Dr. (Mrs.) T. Raichoudhuri was in the chair. The audited accounts for 1953-54 and the Budget for 1954-55 were approved. The meeting adjourned.

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The adjourned meeting of the Working Committee was held on 5-2-55. Eight members were present. Dr. (Mrs.) T. Raichoudhuri presided. The annual report for 1953-54 and the annual report of the Assam Medical Relief Committee were accepted. The formation of a separate branch at Nalbari was approved.

BAHRAICH BRANCH—A meeting of the branch was held on 12-10-54. Dr. G. P. Srivastava presided. Nine members were present. A case of Haematosalpinx was demonstrated by Dr. (Miss) V. D. Kamat.

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A meeting was held on 27-11-54 with Dr. G. P. Srivastava in the chair. Sixteen members were present. Office-bearers for 1954-55 were elected with Dr. G. P. Srivastava as the president and Dr. R. S. Agarwala as hony. secretary. An operated case of Transplantation of the Ureter was demonstrated by Dr. (Miss) M. D. Kamat. A case of Goitre was demonstrated by Dr. D. Gupta.

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A meeting took place on 16-12-54. Fifteen members were present. Dr. (Miss) G. B. Kabaraji, Dy. Director of Medical and Health Services spoke on Family Planning. Dr. S. M. Marwah read a paper on Family Planning. Dr. (Miss) V. D. Kamat demonstrated a case of Subperitoneal Fibroid of Uterus and read a paper on Tumours of the Uterus.

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The annual report of the branch for 1953-54 shows an increase in membership. During the year 11 meetings were held and 4 papers were read in addition to the demonstration of a number of cases. The financial position was satisfactory.

BANARAS BRANCH—The members of this branch organised a social gathering on 14-1-55 to meet the Chief Minister of U.P. Capt. S. K. Choudhuri, Ex-President welcomed the Chief Minister and in his speech recounted the history and activities of the branch. The Chief Minister congratulated the branch on its successful publication of "Apka-Swasthya". He also referred to the scientific aspects of Ayurveda.

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The Editorial Board of "Apka Swasthya" gave an At Home to the Rajyapal Sri K. M. Munshi and his wife, on 5-2-55. A bound volume of "Apka-Swasthya" of the previous year was presented to Rajyapal, who expressed his appreciation of the journal. He desired that physicians should cultivate personal interest in their patients as it went a long way to help the patient regain his health.

BHUJ BRANCH—A meeting of the branch was held on 28-10-54. Dr. Vallabhjibhai presided. Eight members were present. Office-bearers for 1954-55 were elected with Dr. V. Thakkar as president and Dr. H. J. Chauhan as secretary.

BERHAMPORE (GANJAM) BRANCH—The annual meeting of the branch was held on 23-1-55. The annual report and audited accounts upto September 1954 were passed. Office-bearers were elected with Dr. S. B. Palit as president and Dr. M. V. Ramanayya as hony. secretary. Dr. G. C. Pattanayak read a paper on "Reorganisation of Medical Courses in the light of the proposed 3 year degree Course".

BOKARO BRANCH—A meeting of the branch was held on 17-12-54 with Dr. P. R. Bhattacharjee in the chair. Nine members were present. It was decided to hold clinical meetings at least once a month.

CACHAR BRANCH—A meeting of the branch was held on 29-1-55. Dr. J. N. Chakravorty presided. Fifteen members were present. Dr. H. N. Chaudhury read a paper on "Anaemia of Pregnancy".

MORVI BRANCH—A meeting of the branch was held on 19-12-54. Dr. D. G. Dave spoke on 'Wisdom of Withholding Prognosis from the Patient'. Dr. P. D. Raval was elected on the advisory committee of Sir Waghji Hospital, Morvi.

MUZAFFARNAGAR BRANCH—A meeting of the branch was held on 12-12-54 with Dr. Vishnu Datt in the chair. Two rare cases were discussed, one of Diaphragmatic Hernia and the other of Broncho Pleural Fistula. Both were illustrated by Skiagrams.

NIZAMABAD BRANCH—A meeting of the branch was held on 12-12-54 with Dr. L. R. Deshpande in the chair. It was decided to donate Rs. 1,000/- for a new medical college at Hyderabad. Dr. L. R. Deshpande delivered a lecture on 'Endocrine Glands'.

RAMNAD BRANCH—The annual meeting of the branch was held on 19-12-54. Dr. R. Venkatachari presided. The annual report was adopted. Dr. K. Balakrishan gave a talk on 'Pulmonary Tuberculosis in Childhood'. Major C. A. Naidu spoke on 'Recent Advances in Dermatology'. There was a film demonstration also on the life cycle of Malaria Parasite and Operative Shock.

TIRUNELVELI BRANCH—A meeting of the branch was held on 30-10-54. Sixty members were present. Dr. P. S. Kalyanasundaram presided. Dr. Kalyanasundaram exhibited a radiograph of a case of 'Congenial Absence of the Lower Three pieces of Sacrum and Cotccyx'. Dr. K. Rao spoke on 'Early Manifestations of Tuberculosis of the Lungs'.

WEST KHANDESH BRANCH—A meeting of the branch was held on 28-11-54 with Dr. S. Sathye in the chair. Shri Lonkar, Probation Officer, Remand Home spoke on the 'Social Aspect of the Problem of Delinquent Children and Orphans'.

Latest Treatment for HYPOCHROMIC ANAEMIA

with...

MOLYBDENUM
COLLOIDAL IRON
COBALT & COPPER
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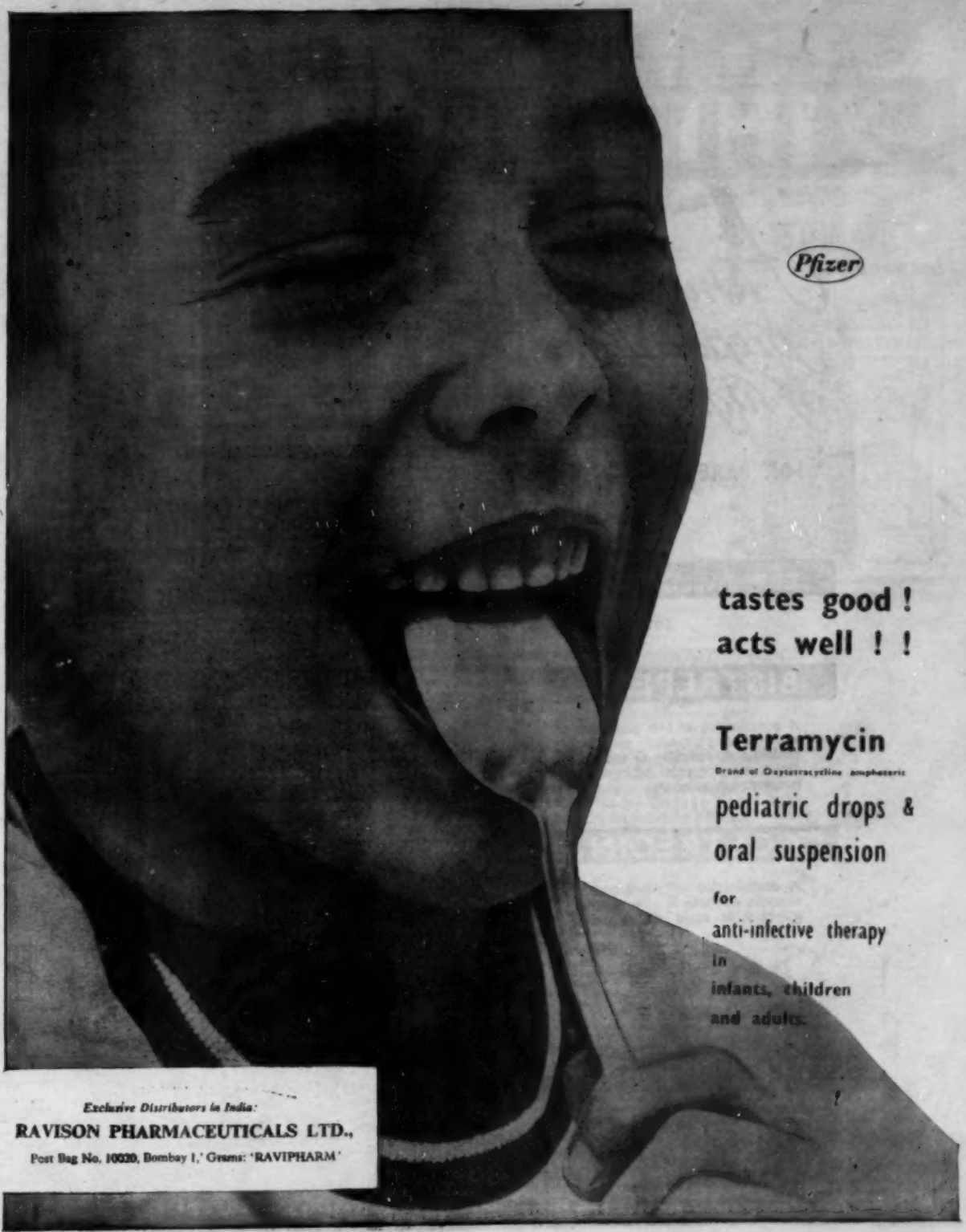

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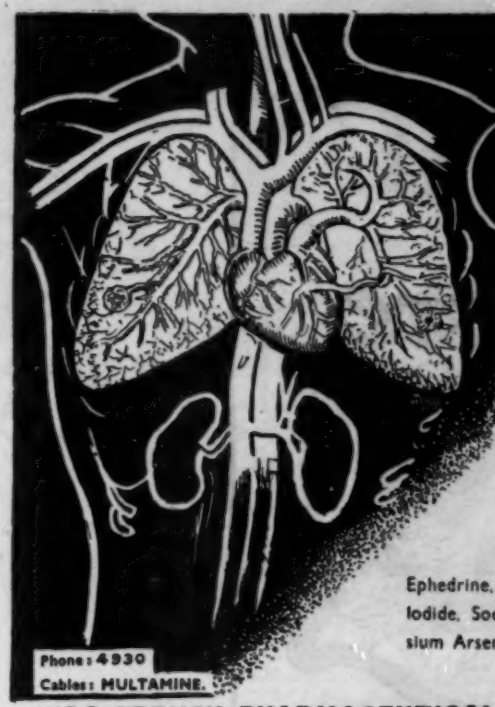

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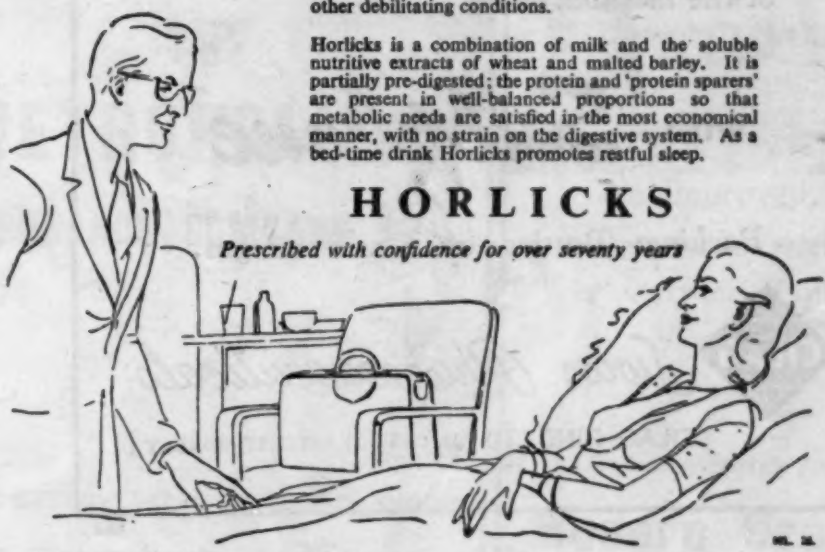

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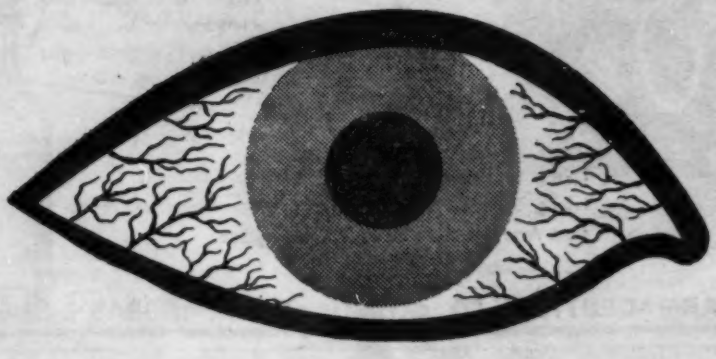

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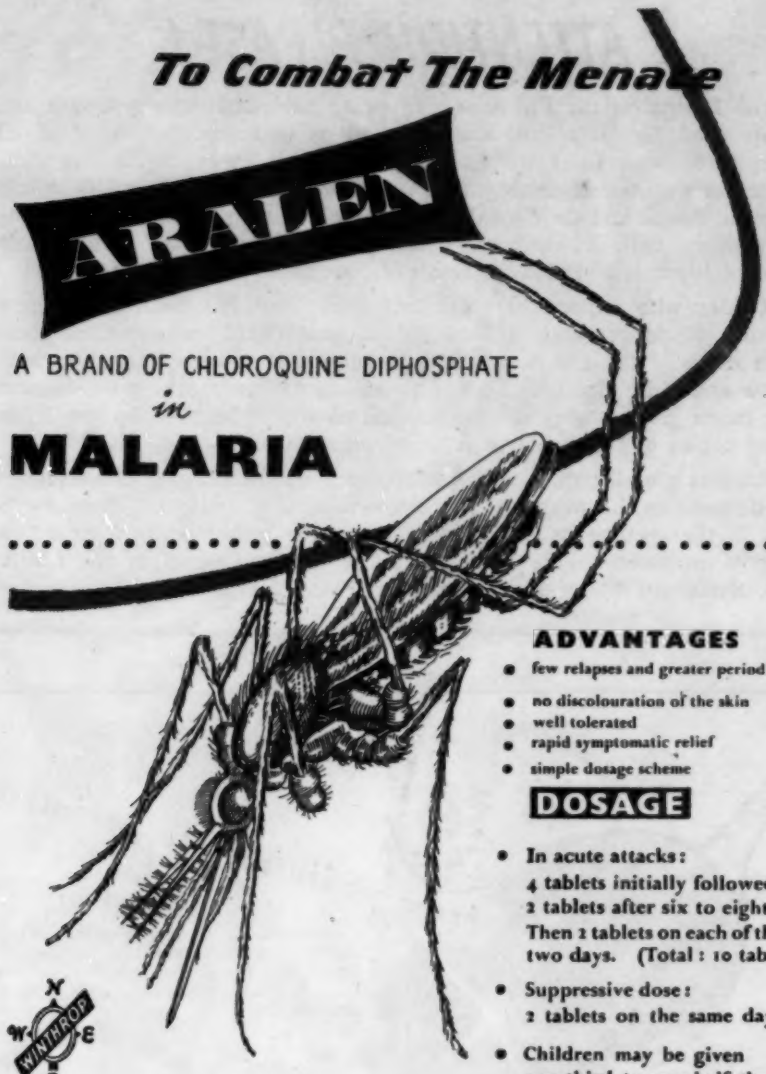

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